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JVC

SERVICE MANUAL

MODEL
QL-F4

QUARTZ
FULLY AUTOMATIC
TURNTABLE

No. 2445
January 1978

33

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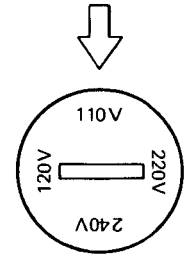
Wraning: When replacing the parts marked with ⚠ , be sure to use the designated parts to ensure safety.

CHECKING YOUR LINE VOLTAGE (For U.S. Military Market and Other Countries)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this equipment. The voltage selector switch is located either on the set's on the chassis. Simply insert a screw driver into the voltage selector switch and turn it in either direction while pressing slightly and in such a way that the desired voltage marked on the switch is positioned underneath the arrow marked on the rear panel or the chassis. The voltage selector switch accommodates up to three turns in either direction.



1. Specifications

Motor section

Motor	:	Coreless DC type Quartz Locked FG servomotor
Drive system	:	Direct drive
Speeds	:	33-1/3, 45 rpm
Wow and flutter	:	0.025% (WRMS)
Signal-to-noise ratio	:	More than 62dB (IEC-B) More than 72dB (DIN-B)
Speed detection	:	Frequency generator
Starting torque	:	650g·cm
Speed deviation	:	Within 0.004%
Load characteristics	:	0% (with 100g total tracking force)
Drift	:	0.0001%/H
Power characteristics	:	0% (±10V)
Temperature characteristics	:	0.00005%/°C
Platter	:	31.2cm

Tonearm section

Type	:	TH system (Tracing-Hold) S-shaped tubular arm
Effective length	:	220mm
Overhang	:	15mm
Weight range including shell	:	14.5 – 22 g (Headshell 10 g)

Cartridge section (Except for U.S.A. and Canada)

Model	:	MD-1025
Type	:	Moving magnet (MM)
Frequency response	:	10Hz – 25,000Hz
Output	:	3mV (1,000Hz)
Channel separation	:	25dB (1,000Hz) (Test record TRS-1)
Load resistance	:	47kΩ – 100kΩ
Compliance	:	10×10^{-6}cm/dyne (Dynamic) 30×10^{-6}cm/dyne (Static)
Stylus tip	:	0.5 mil diamond
Stylus	:	DT-Z1S
Optimum tracking force	:	2g

Accessory
EP adaptor 1

Note: Design and specifications subject to change without notice.

Power Specifications

Countries	Line Voltage & Frequency	Power Consumption
U.S.A., CANADA	AC 120V, 60Hz	9 watts
CONTINENTAL EUROPE	AC 220V~, 50Hz	9 watts
U.K., AUSTRALIA	AC 240V~, 50Hz	9 watts
U.S. MILITARY MARKET	AC 110/120/220/240V Selectable, 50/60Hz	9 watts
OTHER AREAS	AC 110/120/220/240V Selectable, 50/60Hz	9 watts

2. Service Precautions

1. Be sure to place the unit on a level surface when adjusting motor rotation.
2. In servicing, do not use parts other than those specified.
3. Be careful not to damage the motor shaft when repairing the motor unit.
4. When the heatsink (including X820) is removed from the motor board to permit repair of the circuit board, the transistor temperature may increase due to the lack of heat radiation. Attach an aluminum plate (approx. 100(W) x 100(D) x 1(H) mm to the motor board).
5. If noise is produced when the knobs are turned or replaced, apply white grease or a small amount of silicon (50,000 unit, a quarter of a drop) on the knob shafts and the moving parts of the spring.
   Note: Resin of the knob may be damaged if lubricating oils other than those specified are used.

3. Features

- Quartz Locked Direct Drive system
- Quartz Locked speed control system
- DC Type FG servomotor
- Quartz oscillated one-Low strobo elliminate
- Fully automatic mechanism
- New gimbal support arm
- Diamong stylus
- Anti-skating mechanism
- Oil-Damped Cueing

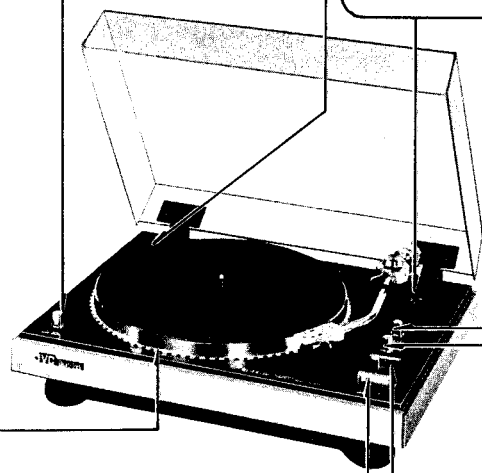
4. "How to Operate" (Names and Functions)

Speed select knob
Select a proper position of the speed select knob in accordance with the rpm of the record.
33-1/3 rpm record (LP) ....."33"
45 rpm record (EP) ....."45"

EP adaptor
Place the adaptor on the center spindle when playing a record having a bigger diameter center hole such as a doughnut record.

Anti-skating knob
This device cancels out the centripetal force that pulls the tonearm to the center of the platter. This prevents the stylus tip from skating toward the center of the platter and at the same time eliminates any excessive stylus tip force on the inner wall of the record groove.
Use the marked dial when employing a spherical stylus.
Use the marked dial when employing an elliptical stylus or a Shibata stylus.
Turn the dial to the same number on the tracking force dial.

Stroboscope pattern
A single stroboscope pattern is equipped on the rim of the platter. When the turntable rotates at either 33-1/3 or 45 rpm, the striped pattern will appear stationary to indicate that the turntable speed is correct.



Repeat knob
Decide how many times you want to re-listen to the record by using this knob.
When you set the knob to "R", the record will be played repeatedly.

Start/Reject lever
When you start playing the record, pull forward the lever gently toward "START" and release it.
The lever returns to its original position and the tonearm moves automatically to the position of the first groove of the record pre-selected and gently lowers itself onto the surface of the record to play it.
When you stop playing the record, push the lever in the direction of the arrow toward "REJECT" and release it.
The lever returns to its original position and the tonearm lifts itself up, returns automatically to its rest and the platter stops rotating.
In case of the "REPEAT" knob being set for more than "2" times the tonearm repeats trips more than twice and the platter stops rotating.
Note: **When the dial of the repeat knob indicates other numbers (1, 2, 3, 4, 5, 6, R) than "0", the platter continues to rotate and the Power will not be turned off even though you set the start and reject lever (6) to "REJECT" or even if the playing record has finished. When you want the power to be turned off, be sure to set the repeat (4) to "0".**

Record size select knob
Set the knob to the corresponding position to thesize of the record before you play it.
30cm diameter record ..... "30"(12")
25cm diameter record ..... "25"(10")
17cm diameter record ..... "17"(7")

Arm lifter lever
This is used when you want the tonearm gently lifted up or lowered down. When you push it to "UP" position, the tonearm will be lifted up, and when you pull it to "DOWN" position, it will be lowered down gently onto the record surface.

Fig. 1

5. Operation of Automatic Mechanism

5-(1) Construction Diagram

Mechanical components

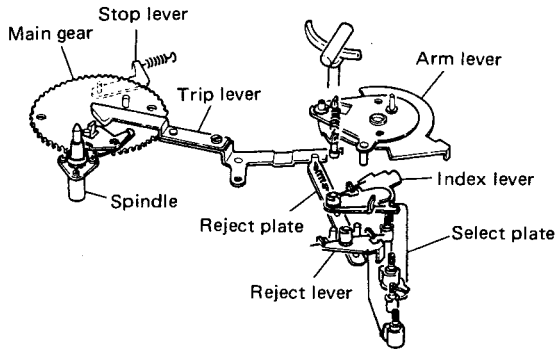


Fig. 2

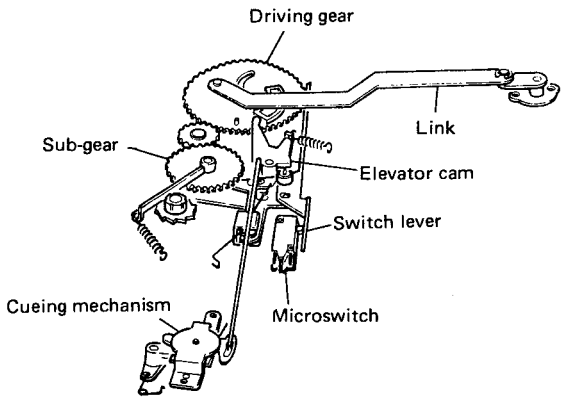


Fig. 3

5-(2) Start Mechanism

When the START/REJECT operation lever is pulled toward "START", the mechanism operates as shown in Fig. 4 to power the platter and carry the tonearm to the specified position on the record surface.

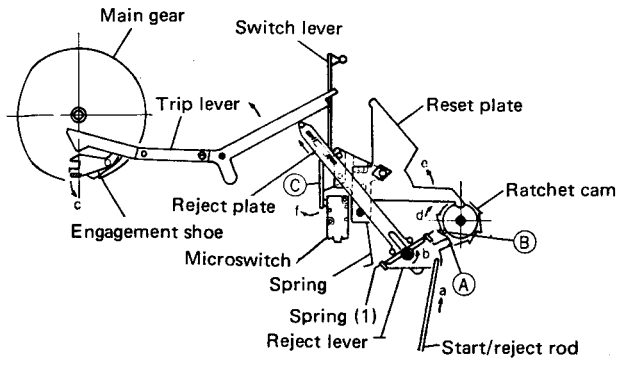


Fig. 4

As shown in Fig. 4, when the start/reject rod is pushed in the direction of arrow (a) the reject lever connected to the rod turns in the direction of arrow (b). At this revolution, the reject plate is pushed by the spring (1), and the engagement shoe is moved in the direction of arrow (c), beginning the starting cycle operation.
At the same time, as the reject lever is pushed in the direction of (b), the boss (B) of the ratchet cam is engaged by arm (A) to rotate the cam in the direction of (d). Consequently the reset plate is pushed away in the direction of (e).
As a result, the switch lever (C) is moved in the direction of (f), and is released from the microswitch, which turns on the power. (This microswitch become conductive when it is separated from the switch lever.)

Fig. 5 shows the position described above.

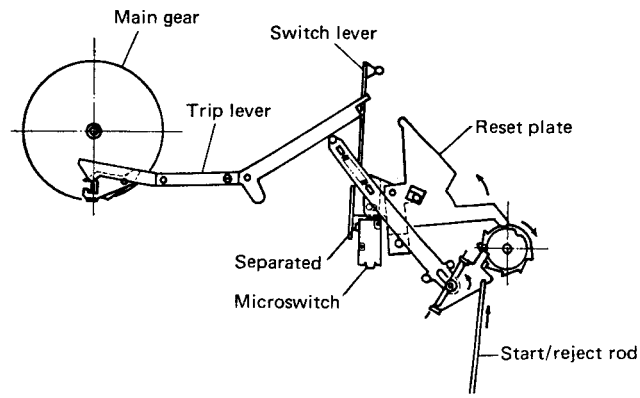


Fig. 5

5-(3) Lead-in Mechanism

When the starting cycle begins and the main gear rotates, the driving gear is turned reciprocally by the link to reciprocate the elevator cam, as shown in Fig.6.

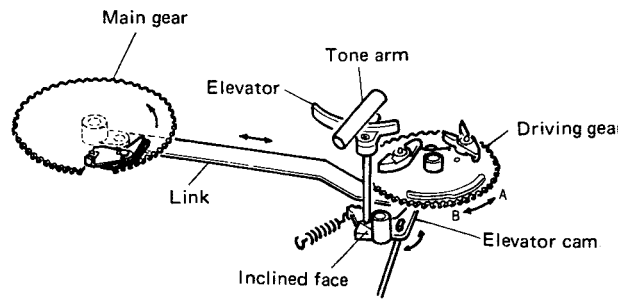


Fig. 6

As the elevator cam moves, its inclined face lifts the elevator, which in turn lifts the tonearm.
In Fig. 7, the lead-in lever is moved in the direction (a) by the counterclockwise rotation (b) of the driving gear, as shown in Fig. 6. As a result, the lead-in lever passes the arm lever stud (A) without touching it. Therefore, the arm lever does not move. During the next process shown in Fig. 8, the lead-in lever strikes against the reset plate and is pushed back in the direction (a). When the driving gear returns in the clockwise direction (B), this time the lead-in lever pushes the arm lever stud (B), and the arm lever stud is moved in the direction of the arrow, as shown in Fig. 9. This finishes the final stage of the lead-in operation.

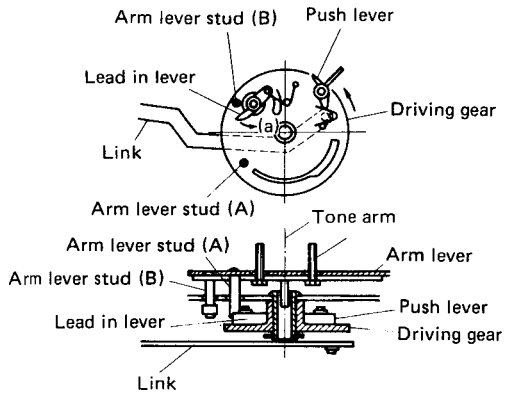


Fig. 7

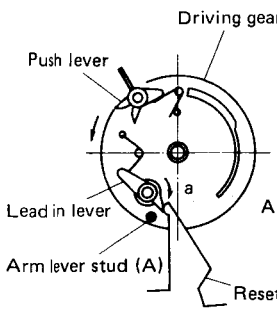


Fig. 8

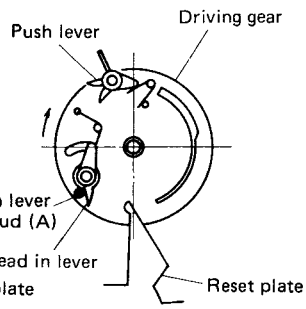


Fig. 9

The stylus is positioned at the beginning of a record according to the record size (17, 25, or 30cm) chosen with the Record Size Select knob. The stylus position is determined by one of three steps on the index lever shown in Fig. 10. Part Ⓐ of the arm lever engages the corresponding step on the index lever.
Turning this eccentric adjustment screw will move the arm lever to fine-adjust the stylus lead-in position.

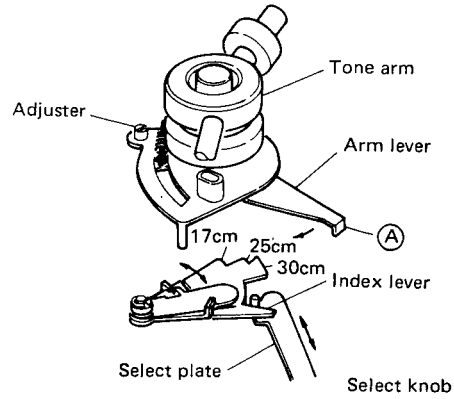


Fig. 10

5-(4) Return Cycle Starting Mechanism

The relationship between the notch in the main gear and the platter gear while a record is being played is shown in Fig. 11. In this condition the main gear does not rotate as the platter rotates because the platter gear and main gear are not engaged. As playing proceeds, however, the arm lever presses the trip lever to gradually more the lower trip and the engagement shoe on the main gear.

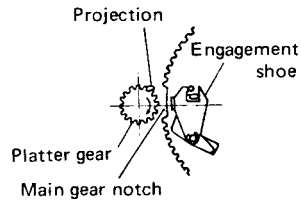


Fig. 11

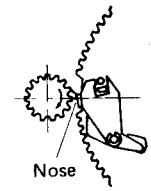


Fig. 12

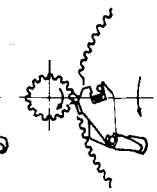


Fig. 13

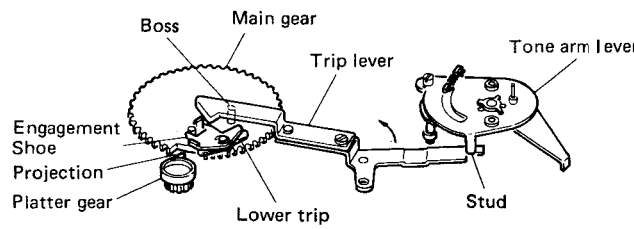


Fig. 14

The relationship between the engagement shoe and the platter gear comes to a state shown in Fig. 12. In this condition, during the time in which the pitch of the grooves is small, the movement of the engagement shoe is small. The engagement shoe is thus pushed back by the nose of the engagement shoe, the main gear being still.
When the stylus comes into the lead-out groove having a large pitch at the end of a record, the movement of the engagement shoe becomes larger than the reverse movement caused by the projection nose, entering the state which is shown in Fig. 13, where the projection presses the engagement shoe to cause the main gear to rotate.

When the main gear notch moves away, both the gears come into engagement, tripping the returning cycle.
After one complete revolution of the main gear, it will return to the position as shown in Fig. 11. The main gear will stop rotating while the platter gear is still turning.
As the main gear turns, the engagement shoe and the lower trip are returned by the outer edge of the platter gear to the original position just before the rotation of the main gear is finished. The trip lever also returns to its original position on the boss on the face of main gear halfway through the main gear rotation.

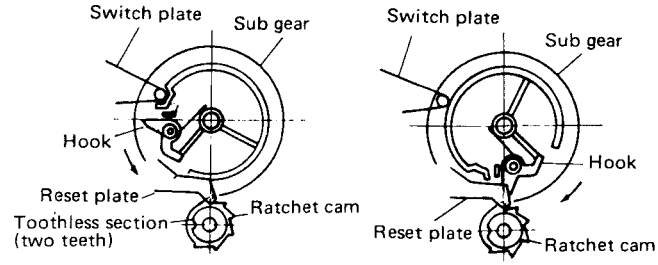


Fig. 16

5-(5) Repeat Mechanism

Setting the REPEAT knob to one of the positions "1" through "6" will cause the tonearm to return from the end of record to the beginning lead-in position and play it again. The same process will be repeated up to six times, depending on the setting. Setting the knob to "R" will cause the tonearm to play the record over and over again endlessly.

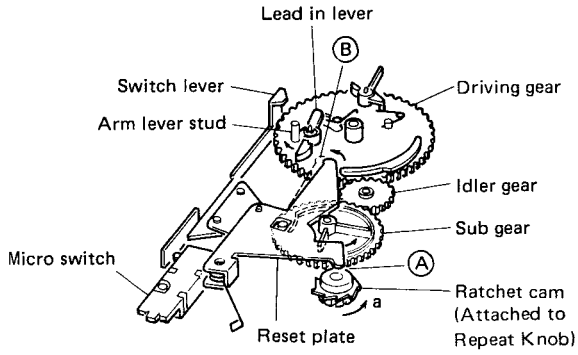


Fig. 15

As shown in Fig. 15, when the ratchet cam is turned in the direction of arrow (a) (toward the position "R" on the REPEAT knob), the part Ⓐ of the reset plate is pushed away by the outer circumference of the ratchet cam until its part Ⓑ is moved as far as the dotted line. Thus, the lead-in lever on the driving gear is always returned by the reset plate and pushes the arm lever stud back to bring the arm lever to the lead-in position, and the record is played again. At the "R" position the hook on the sub gear passes over the toothless section of the ratchet cam, so the cam does not turn.
If the ratchet cam is set to one of the positions "1" through "6" on the REPEAT knob, the ratchet cam and the hook on the sub gear engage after every time one record has been played, as shown in Fig. 16.
Thus the cam turns one step for each cycle. After completion of the specified number of cycles the ratchet cam and hook do not engage, and the reset plate returns to the position as shown in Fig. 15. As a result, the lead-in position. The tonearm is returned to the arm rest, and the power is turned off when the switch plate presses the micro switch.

5-(6) Reject Mechanism

If the START/REJECT lever is pushed toward "REJECT" while a record is playing, the start/reject rod moves in the direction of arrow (a), and the reject plate and trip lever are pushed by the spring (1), as shown in Fig. 17. As a result of this, the engagement shoe is moved out in the direction of arrow (c), beginning the change cycle.

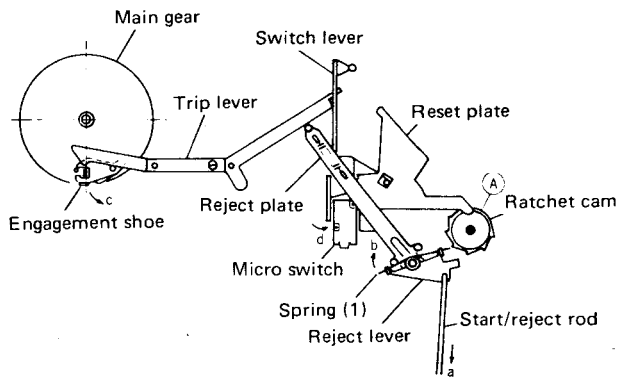


Fig. 17

If the REPEAT knob is at "1", the reset plate engages with the section (A) of the ratchet cam, and the switch lever moves in the direction of (d) to push the micro switch, turning the power off.

6. Block Diagrams

6-(1) Servomotor Control System

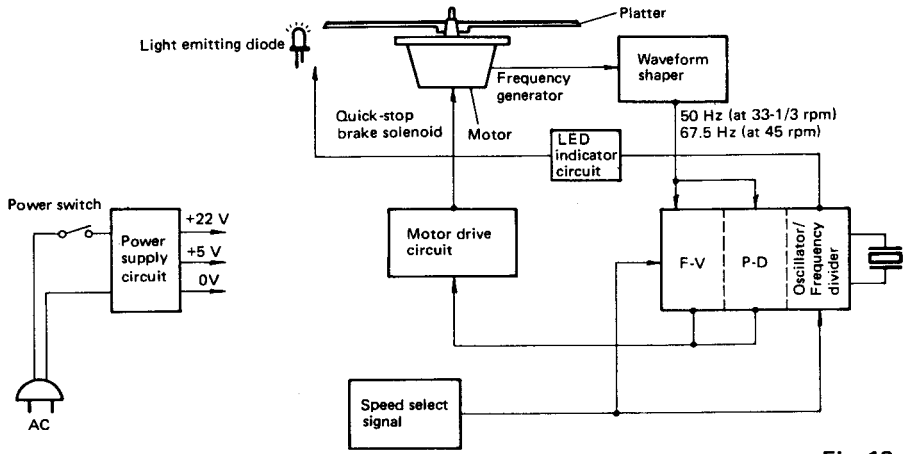


Fig. 18

6-(2) IC802 Integrated Circuits and Waveforms

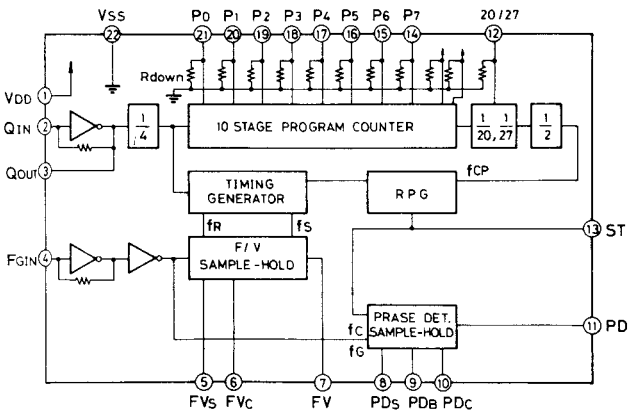


Fig. 19 Block Diagram

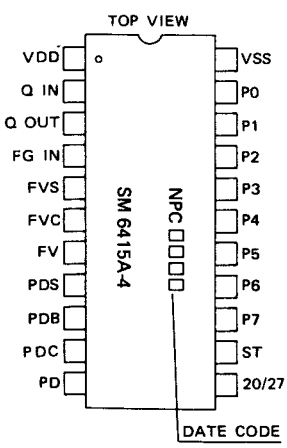


Fig. 20 Pins Location

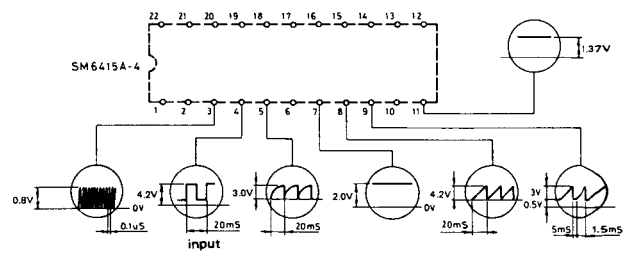


Fig. 21 Waveforms (Pin 1 through Pin 11)

F/V section

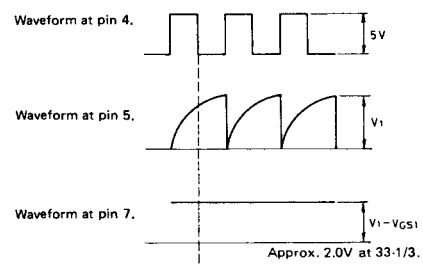


Fig. 22 Waveforms (F/V and P/D)

P/D section

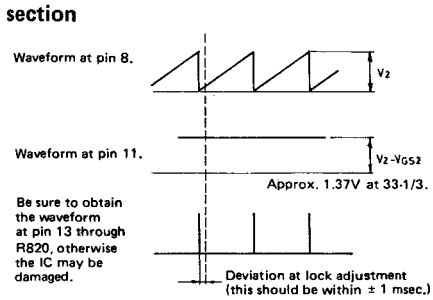
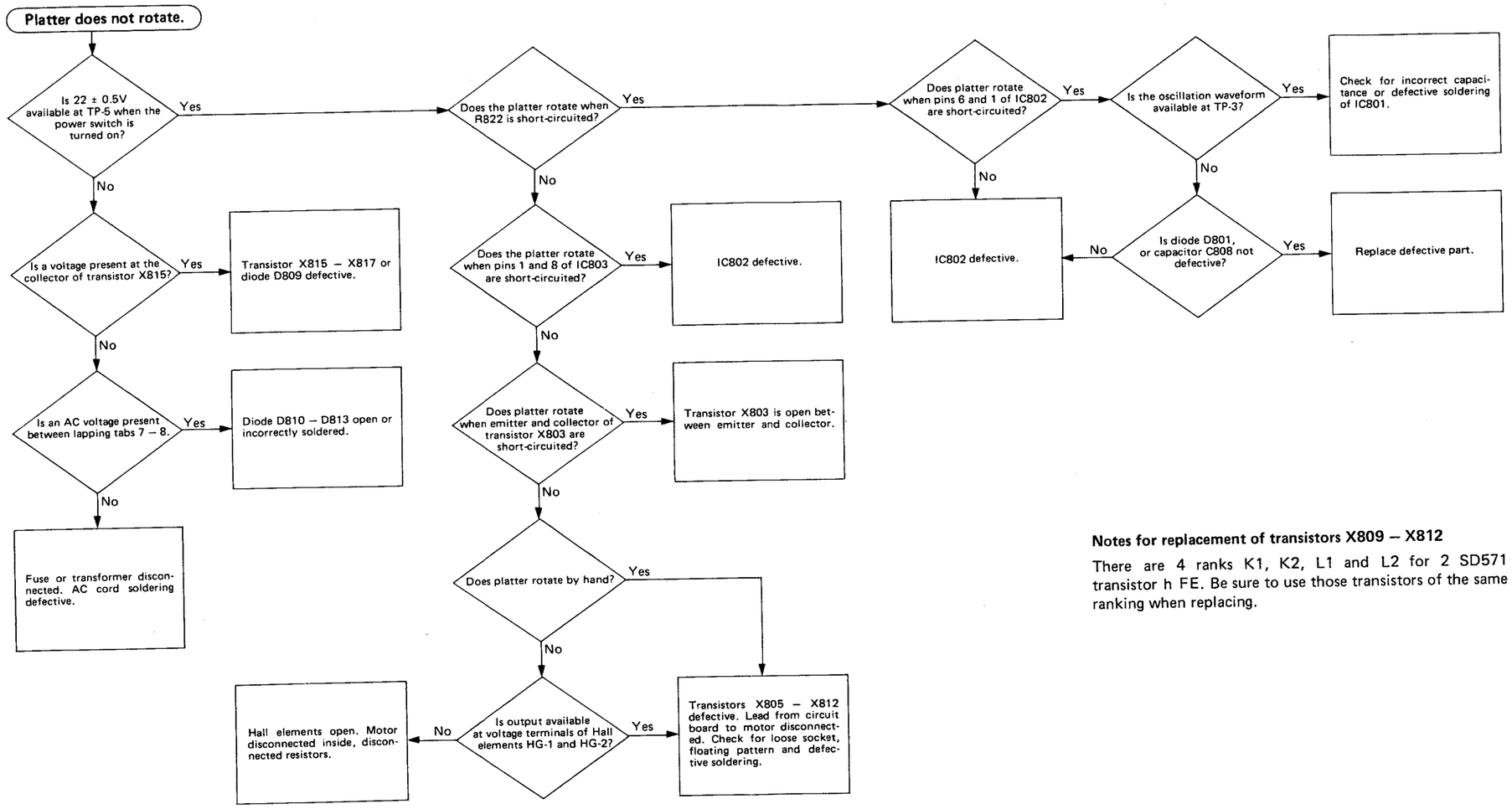

Waveform at pin 8.
V2
Waveform at pin 11.
V2-VGS2
Approx. 1.37V at 33-1/3.
Be sure to obtain the waveform at pin 13 through R820, otherwise the IC may be damaged.
Deviation at lock adjustment (this should be within ± 1 msec.)

Fig. 23

7. Troubleshooting

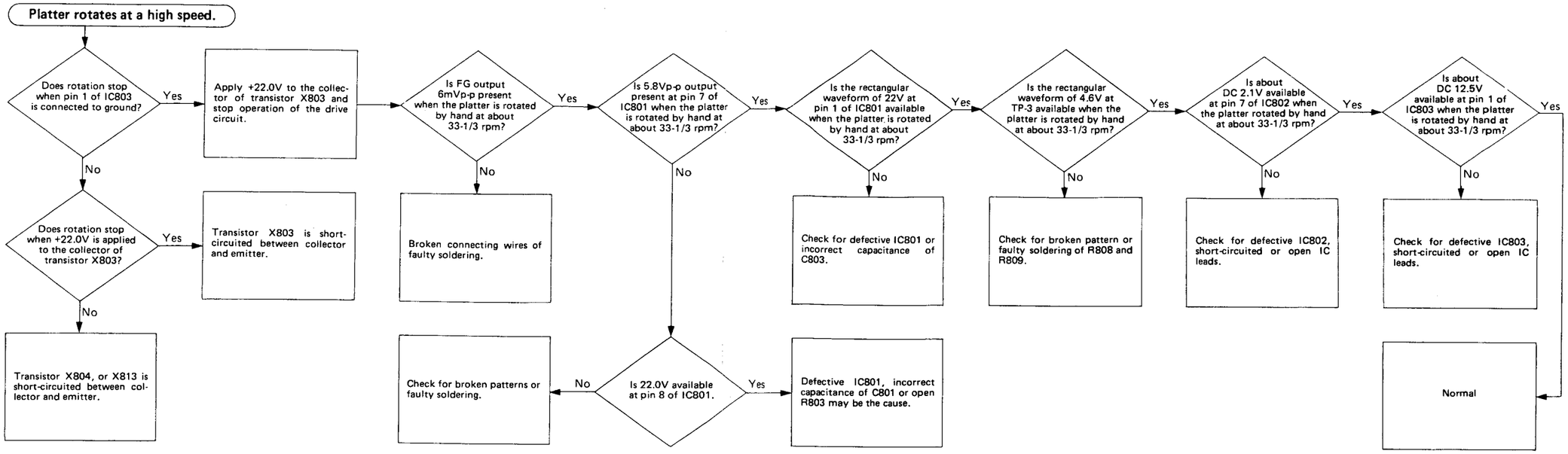
7-(1) Platter does not rotate


Platter does not rotate.
Is 22 ± 0.5V available at TP-5 when the power switch is turned on?
Yes
No
Is a voltage present at the collector of transistor X815?
Yes
Transistor X815 – X817 or diode D809 defective.
No
Is an AC voltage present between lapping tabs 7 – 8.
Yes
Diode D810 – D813 open or incorrectly soldered.
No
Fuse or transformer disconnected. AC cord soldering defective.
Does the platter rotate when R822 is short-circuited?
Yes
No
Does the platter rotate when pins 1 and 8 of IC803 are short-circuited?
Yes
IC802 defective.
No
Does platter rotate when emitter and collector of transistor X803 are short-circuited?
Yes
Transistor X803 is open between emitter and collector.
No
Does platter rotate by hand?
Yes
No
Is output available at voltage terminals of Hall elements HG-1 and HG-2?
No
Hall elements open. Motor disconnected inside, disconnected resistors.
Yes
Transistors X805 – X812 defective. Lead from circuit board to motor disconnected. Check for loose socket, floating pattern and defective soldering.
Does platter rotate when pins 6 and 1 of IC802 are short-circuited?
Yes
No
IC802 defective.
Is the oscillation waveform available at TP-3?
Yes
Check for incorrect capacitance or defective soldering of IC801.
No
Is diode D801, or capacitor C808 not defective?
No
Yes
Replace defective part.

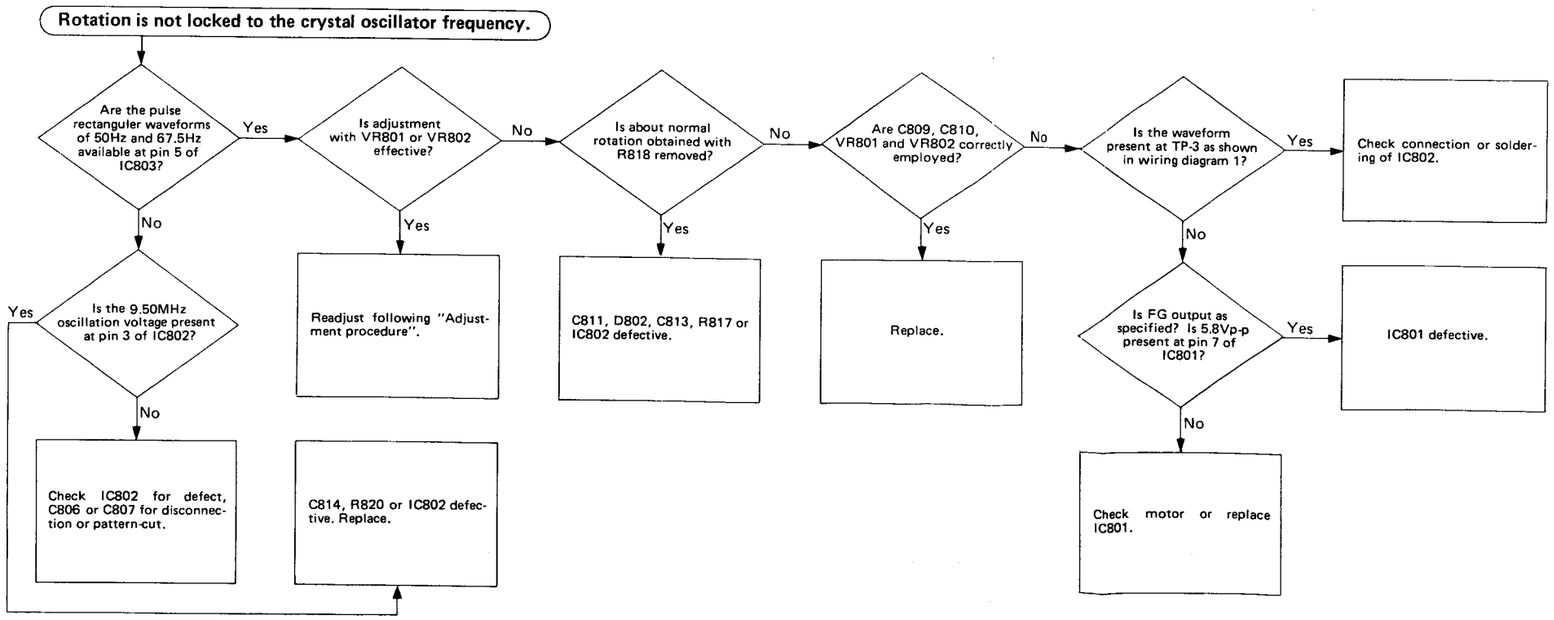
Notes for replacement of transistors X809 – X812

There are 4 ranks K1, K2, L1 and L2 for 2 SD571 transistor h FE. Be sure to use those transistors of the same ranking when replacing.

7-(2) Platter rotates at high speed


Platter rotates at a high speed.
Does rotation stop when pin 1 of IC803 is connected to ground?
Yes
Apply +22.0V to the collector of transistor X803 and stop operation of the drive circuit.
Is FG output 6mVp-p present when the platter is rotated by hand at about 33-1/3 rpm?
Yes
Is 5.8Vp-p output present at pin 7 of IC801 when the platter is rotated by hand at about 33-1/3 rpm?
Yes
Is the rectangular waveform of 22V at pin 1 of IC801 available when the platter is rotated by hand at about 33-1/3 rpm?
Yes
Is the rectangular waveform of 4.6V at TP-3 available when the platter is rotated by hand at about 33-1/3 rpm?
Yes
Is about DC 2.1V available at pin 7 of IC802 when the platter rotated by hand at about 33-1/3 rpm?
Yes
Is about DC 12.5V available at pin 1 of IC803 when the platter is rotated by hand at about 33-1/3 rpm?
Yes
Normal
No
Does rotation stop when +22.0V is applied to the collector of transistor X803?
Yes
Transistor X803 is short-circuited between collector and emitter.
No
Transistor X804, or X813 is short-circuited between collector and emitter.
No
Broken connecting wires of faulty soldering.
No
Is 22.0V available at pin 8 of IC801.
No
Check for broken patterns or faulty soldering.
Yes
Defective IC801, incorrect capacitance of C801 or open R803 may be the cause.
No
Check for defective IC801 or incorrect capacitance of C803.
No
Check for broken pattern or faulty soldering of R808 and R809.
No
Check for defective IC802, short-circuited or open IC leads.
No
Check for defective IC803, short-circuited or open IC leads.

7-(3) Rotation is not locked to the crystal oscillator frequency


Rotation is not locked to the crystal oscillator frequency.
Are the pulse rectanguler waveforms of 50Hz and 67.5Hz available at pin 5 of IC803?
Yes
Is adjustment with VR801 or VR802 effective?
No
Is about normal rotation obtained with R818 removed?
No
Are C809, C810, VR801 and VR802 correctly employed?
No
Is the waveform present at TP-3 as shown in wiring diagram 1?
Yes
Check connection or soldering of IC802.
No
Is FG output as specified? Is 5.8Vp-p present at pin 7 of IC801?
Yes
IC801 defective.
No
Check motor or replace IC801.
No
Is the 9.50MHz oscillation voltage present at pin 3 of IC802?
Yes
No
Check IC802 for defect, C806 or C807 for disconnection or pattern-cut.
Yes
Readjust following "Adjustment procedure".
Yes
C811, D802, C813, R817 or IC802 defective.
Yes
Replace.
C814, R820 or IC802 defective. Replace.

8. Removal of Chassis Base Assembly

Procedure:
Remove the all screws (Item No. 1 through No. 14) arrowd in Fig. 24.
Bottom View

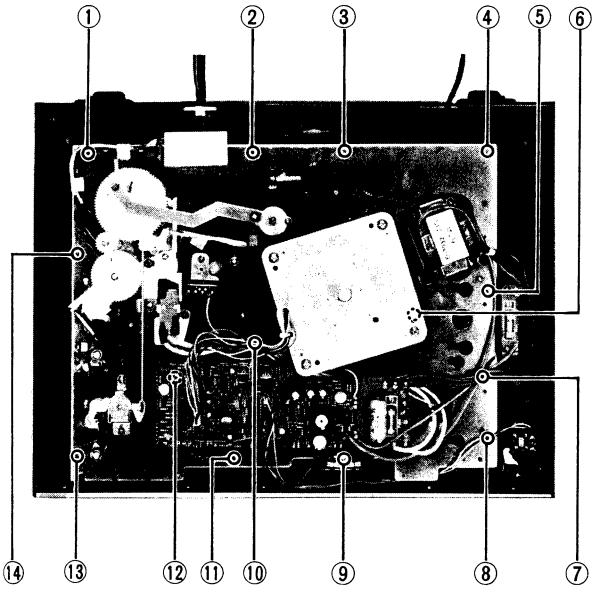


Fig. 24

Fig. 25

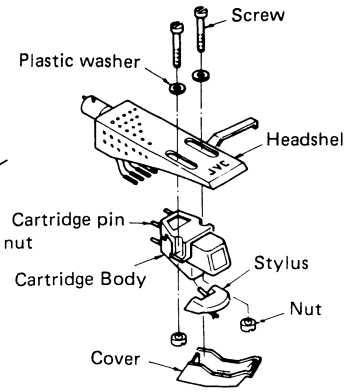


Fig. 26

9. Replacement Procedures

9-(1) Cartridge Replacement

1. Unscrew the connector nut to remove the headshell.
2. Remove the two long screws on the headshell which hold the cartridge.
3. Connect the lead wires of the headshell to the new cartridge, being careful to match the polarities correctly. Polarity and wire colors are as follows:
   White(+) ..... L Red (+) ..... R
   Blue(–) ..... LE Green (–) ..... RE
4. Attach the cartridge to the headshell squarely, and gently tighten the screws.
5. Set the tonearm cueing lever to "DOWN", and then bring the sytlus tip to the overhang indicator by sliding the cartridge back and forth.
   After the adjustment, fix it firmly.
6. After attaching the cartridge, slide the headshell into the tonearm with the connector pin fitting in the groove. Tighten the connector nut.
7. Be sure to adjust the tracking force and lead-in position after replacing the cartridge. **(Refer to Fig. 25 & 26.)**

9-(2) Mechanism Chassis Replacement

When you replace the entire mechanism (or the driving gear only), be sure to check that the lead-in lever attached to the driving gear has been returned in the direction of arrow (a) as shwon in **Fig. 27.** (The lead-in lever faces in the direction of arrow (b), the mechanism may malfunction or be damaged.)

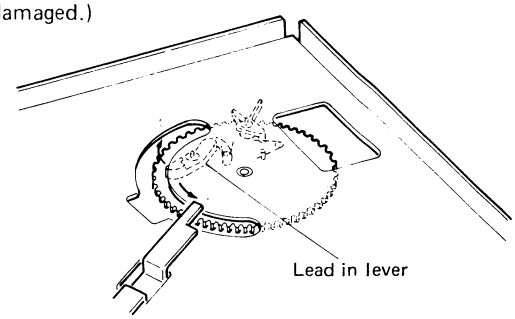


Fig. 27

10. Adjustment Procedures

Servomotor Control Section

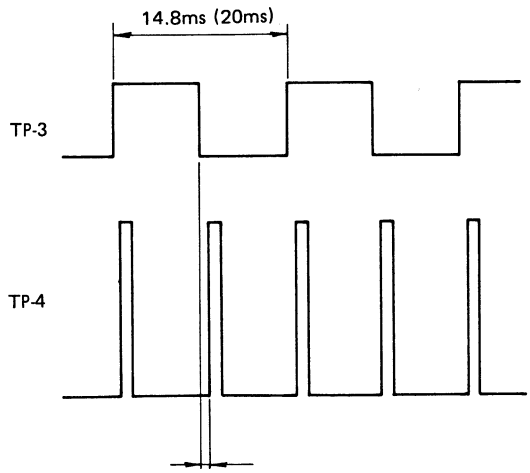
10-(1) Power Supply Voltage Check

1. Disconnect the motor socket from the circuit board. Turn the power switch on. (Confirm that the rated voltage is spplied to the unit.) Confirm that 22±0.5V DC is present at TP-5. If the voltage is deviate from that range, adjust with the semi-fixed resistor VR803 (1kΩ).
2. Confirm that the voltage difference at TP-5 is less than −1V when platter is installed.

10-(2) Lock Adjustment

1) With dual beam oscilloscope

1. Connect the motor socket to the circuit board. Connect the dual beam oscilloscope to TP-3, TP-4. Obtain a turntable speed of 45 rpm by setting the speed select switch to 45 and power switch is ON, then adjust the semi-fixed resistor VR802 (100kΩ) until the following waveforms are obtained.



Adjust to get a difference of within ± 1 msec from TP 4.

Fig. 28

2. Obtain a turntable speed of 33-1/3 rpm by setting the speed select switch to 33-1/3, then adjust the semi-fixed resistor VR801 (47kΩ) until the difference between TP-3 and TP-4 is within ±1 msec.

Precaution

If the measurement of TP-3 is required, connect the output of test equipment to TP-3 through 10kΩ resistor.

2) With single beam oscilloscope

Connect the single beam oscilloscope to TP-3, TP-4 as shown in Fig. 29 below. Adjust until the waveforms shown in Fig. 30 are obtained.

Allowable deviation for the adjustment should be within 1 msec. as shown in Fig. 30.

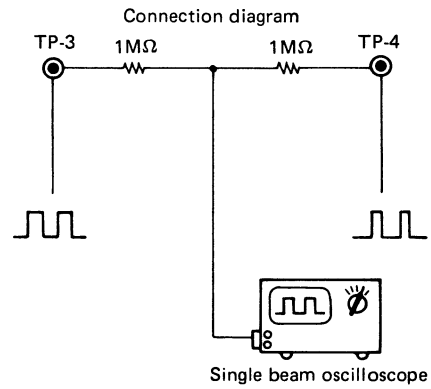


Fig. 29

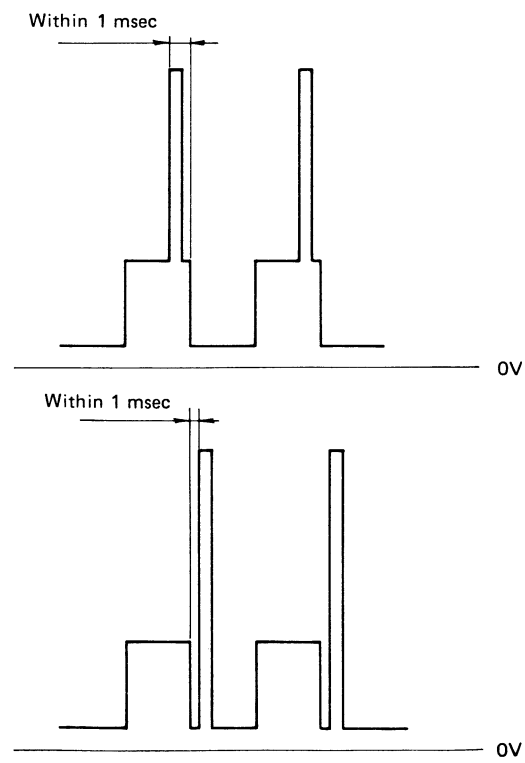


Fig. 30

Tonearm Section

Preparations

Do not connect the power cord to the outlet until all preparations are completed.

Adjustment

The following four adjustments instructed in (3), (4), (5) and (8) are recommended only in the event that you have replaced a cartridge or a headshell.
Otherwise, no adjustments are required.

Note: Do not use a headshell whose hook has a raised curved shape.
If such a headshell is used, you will not be able to play a disc with the turntable cover closed.

10-(3) Overhang Adjustment (Fig. 31)

Loosen the cartridge mounting screws and slide the cartridge to adjust the stylus tip position so that the tip is coming just over the overhang indicator, according to the cartridge used.

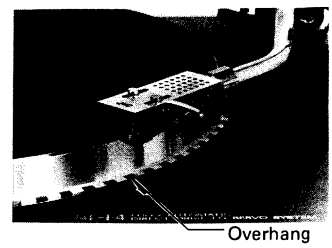


Fig. 31

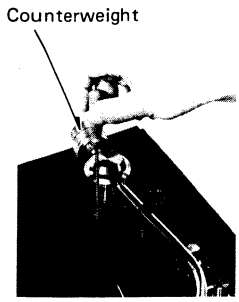


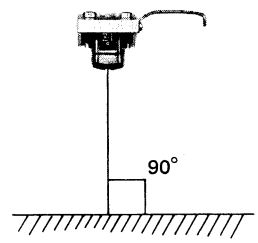
Fig. 32

10-(4) Tonearm Elevator Height Adjustment (Fig. 32)

The optimum clearance between the stylus tip and the record surface is about 6 mm when the tonearm is supported by the tonearm elevator. Turning the adjusting screws clockwise lowers the height of the tonearm elevator and counterclockwise increase it.

10-(5) Headshell Mounting Angle Adjustment (Fig. 33)

If the headshell is not horizontal and the stylus tip is not perpendicular to the record surface, loosen the lock screws as in the illustration and move the headshell to adjust the stylus to a right angle (90°) to the platter. Eyemeasurement is sufficient.



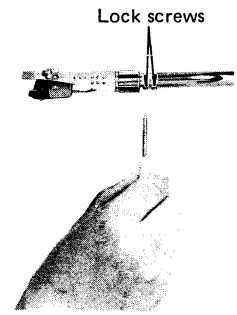


Fig. 33

10-(6) Tracking Force Adjustment (Fig. 34)

Set the anti-skating knob to "0" on the dial.
Place an unwarped disc on the platter.
Remove the stylus cover from the stylus.
Release the tonearm clamp.
Turn the counterweight until the tonearm is balanced.
Stop turning the counterweight when the stylus tip is almost touching the disc surface.
Return the tonearm to the rest and clamp it.
Hold the counterweight at the adjusted position and turn the tracking force dial until the "0" mark is aligned with the index line on the tonearm weight shaft.
Turn the counterweight in the B direction until the "2" mark on the dial is aligned with the index line.

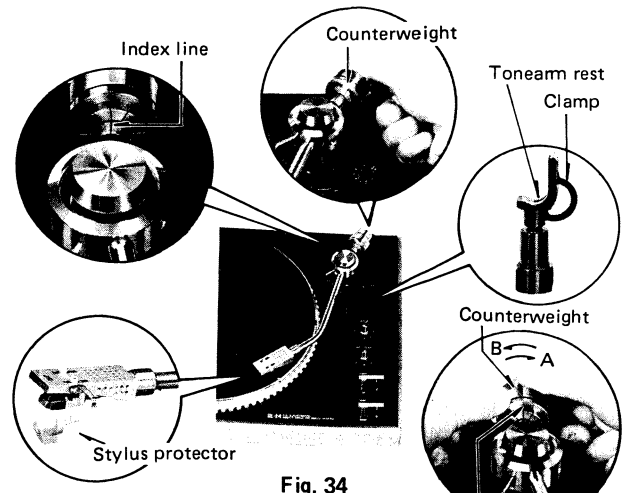


Fig. 34

10-(7) Anti-skating Adjustment (Fig. 35)

Adjust the anti-skating force according to the cartridge used. Turn the anti-skating knob dial to the same number on the tracking force dial.
Use the marked dial when employing a spherical stylus.
Use the marked dial for an elliptical or a Shibata stylus.
Set the "2" of the marked dial to the index line since the QL-F4 is provided with a spherical stylus and the tracking force has been adjusted to 2g.

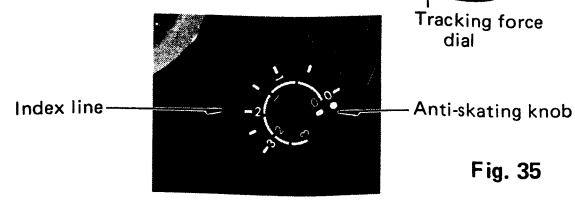


Fig. 35

10-(8) Lead-in Adjustment

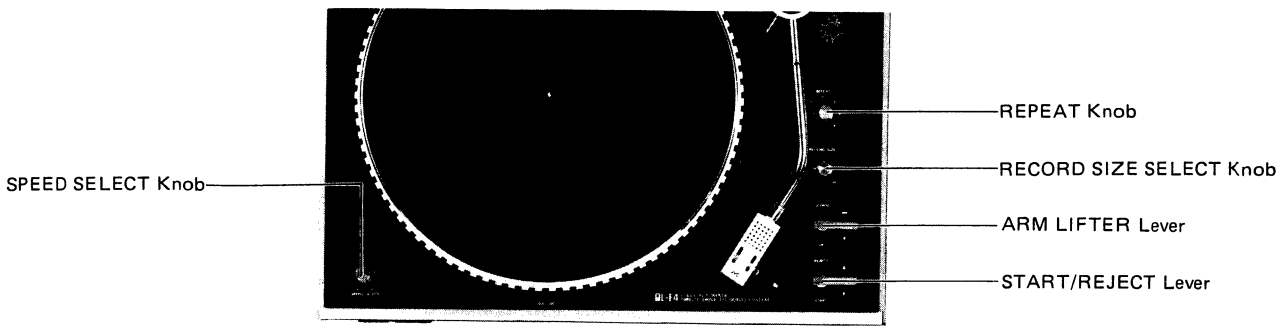


Fig. 35

The adjustment screw for changing the tone arm lead-in position is below the hole.

Fig. 36

The stylus lead-in position has been adjusted at the factory so that the stylus lands correctly onto the lead-in groove of a record. However, the position may need adjustment if the tonearm is replaced. Follow these steps to adjust the lead-in position:

1. Put the 30cm JVC test record (RG324) on the platter.
2. Set the RECORD SIZE select knob to "17", and start automatic playing. If the stylus comes in contact with the test record while the voice is counting in a range between 7 and 29, the lead-in position is correct. If not, turn the adjustment screw with a screwdriver clockwise to move the lead-in position towards the center of the record, where the lead-in count increases, or counter-clockwise to move the lead-in position towards the outer rim of the record, when the lead-in count decreases.

Note: The normal lead-in count range is shown below. If you adjust so that the lead-in count is 18 for a 17cm record the lead-in count for both 25cm and 30cm records will be automatically set within the normal range.

Normal lead-in count range	Record size
7~29 (ϕ172~ϕ167.5)	17cm (7")
13~38 (ϕ246~ϕ241)	25cm (10")
5~34 (ϕ297~ϕ291)	30cm (12")

10-(9) Lead-out Adjustment

The correct lead-out adjustment has also been made at the factory, but its adjustment is necessary after replacement of a tonearm or for other reasons, follow the steps below. Fig. 21 shows the mechanism after removal of the platter.

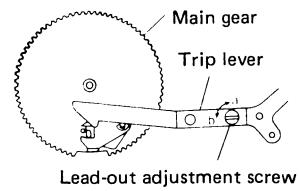


Fig. 37

* **If lead-out does not occur:**
  Play the 17cm JVC test record (RG652) having a lead-out groove pitch of 3mm. If the change cycle does not begin when the stylus reaches the lead-out groove, turn the lead-out adjustment screw clockwise in the direction of arrow (a) as shown in Fig. 21.

* **If lead-out occurs too soon:**
  If the change cycle begins before the stylus comes to the lead-out groove of the 17cm JVC test record (RG653, back side of RG652) turn the screw counterclockwise in the direction of arrow (b).

Caution: Unplug the power cord first.

1. Clamp the tonearm to the arm rest.
2. Remove the dust cover.
3. Remove the rubber mat, the platter, and the belt.
4. Turn the set upside down, and place it on blocks to protect the tonearm assembly, spindle shaft and pulley.
5. After removing the signal and power cord assemblies from the bottom board, remove the eight screws fixing the bottom board.

11. Lubrication

The direct drive motor employed in this unit does not require the lubrication.

12. Connection Diagram of TXX-124

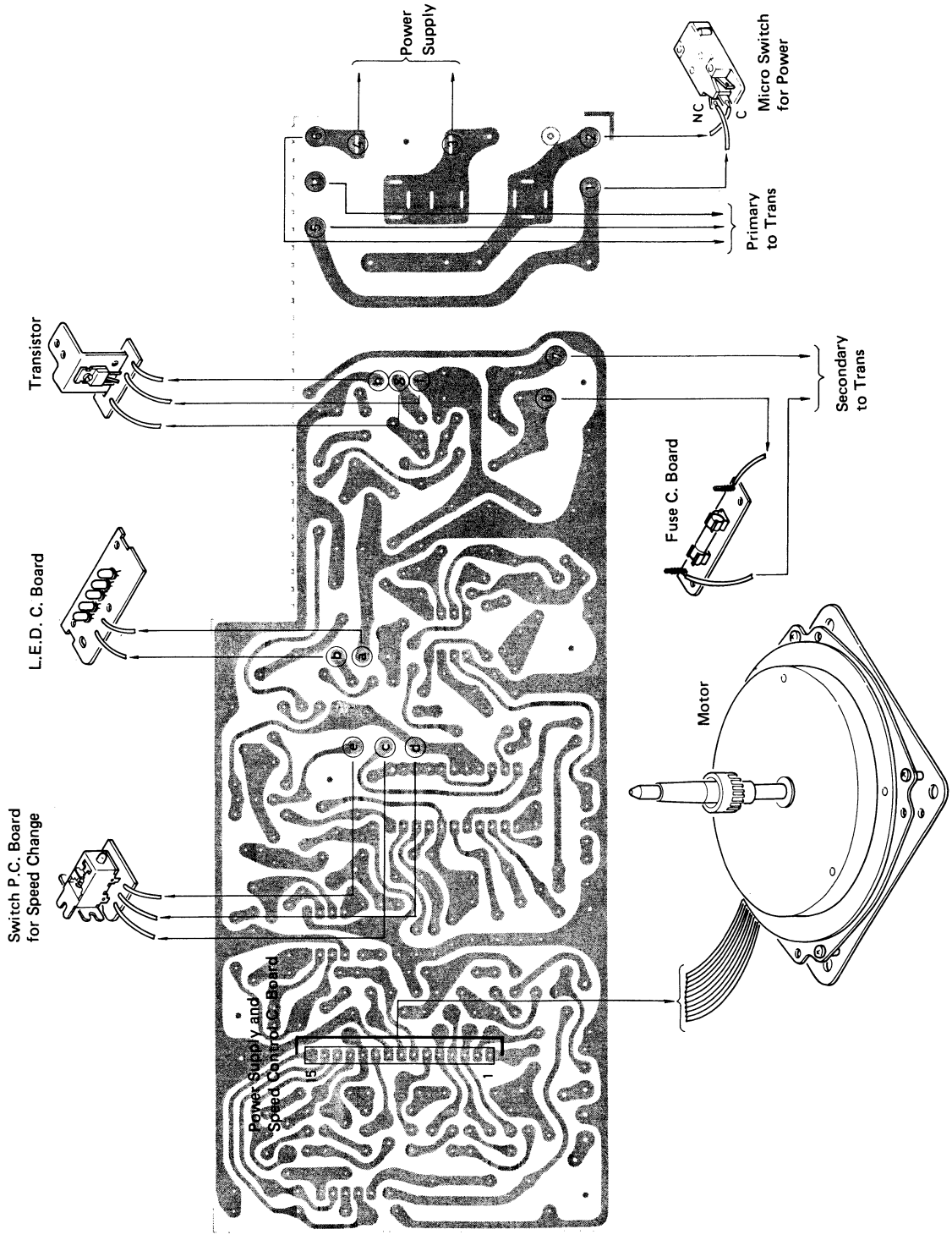


Fig. 38

13. Exploded Views and Parts List

13-(1) Cabinet and Mechanism Assembly

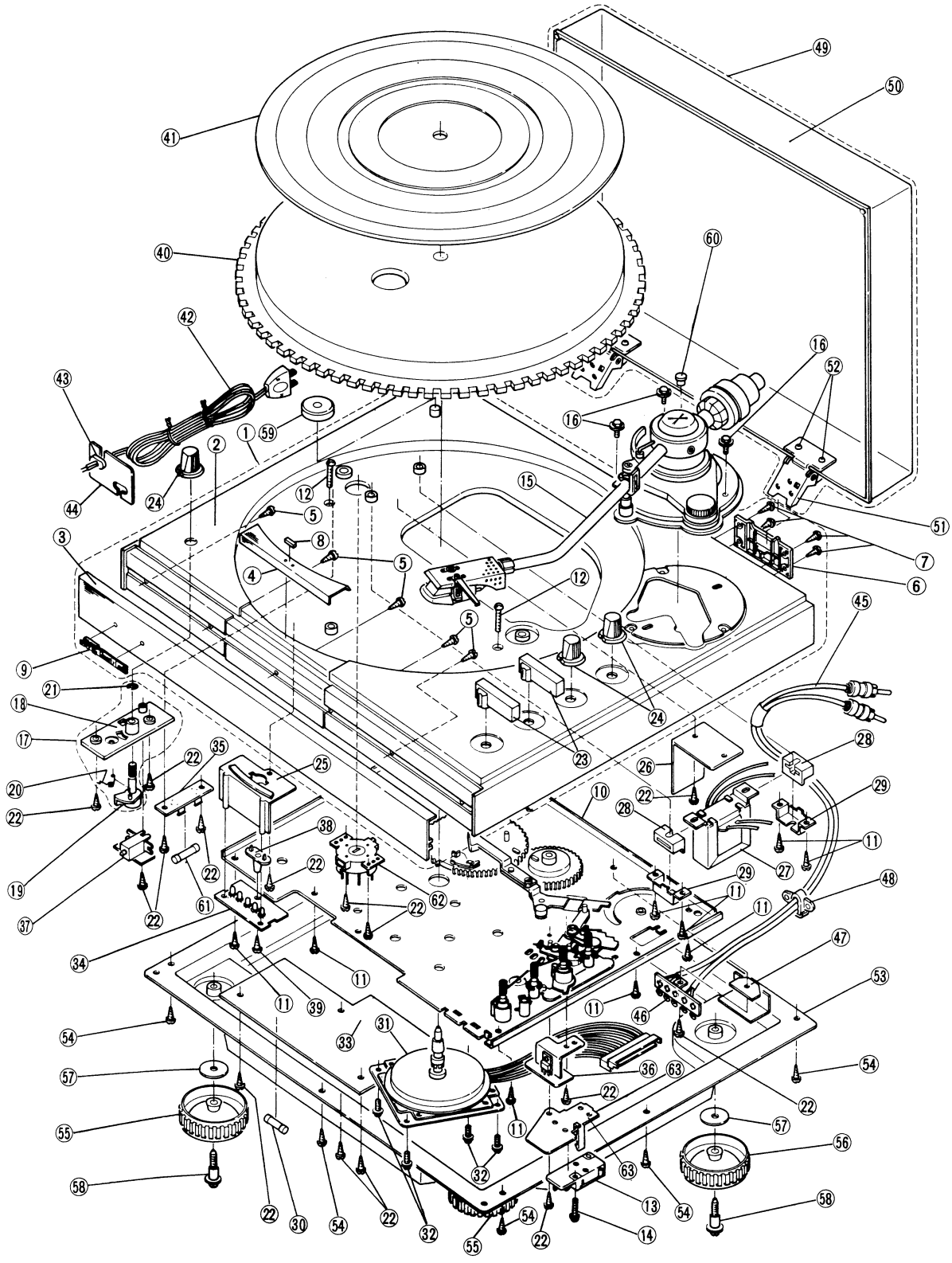


Fig. 39

Cabinet and Mechanism Assembly Parts List

Item No.	Parts No.	Parts Name	Description	Q'ty
1	*E22338-007	Cabinet Ass'y		1
2	*E10172-004	Cabinet		1
3	*E35508-002	Front Panel		1
4	*E35506-001	Lamp Cover		1
5	NPSP3006ZS	Screw		5
6	*E65148-001	Lock Plate		2
7	SSSB3010M	Tapping Screw		8
8	*E65393-001	Mark		1
9	*E65480-001	"		1
10	*F4002	Base Ass'y	Refer to Page 17	1
11	SBSB3012Z	Tapping Screw		17
12	SBSB4020Z	"		2
13	See Page 28	Micro Switch ⚠	Refer to Table 1	
14	"	Screw	"	
15	"	Tone Arm Ass'y	"	
16	E61853-001	Screw		3
17	*E65425-001	SW. Base Ass'y		1
18	*E65326-001	Switch Base		1
19	*E65327-001	Switch Lever Ass'y		1
20	*E49608-003	Spring		1
21	REE5000	"E" Ring		1
22	SBSB3008Z	Tapping Screw		9
23	*E35471-001	Knob		2
24	*E35507-001	"		3
25	*E65291-001	Color Screen		1
26	*E35666-001	Shield Cover		1
27	*See Page 28	Power Transformer ⚠	Refer to Table 1	
28	*E61824-002	Cushion		2
29	E61985-001	Spacer		2
30	See Page 28	Fuse	Refer to Table 1	
31	*m-938B	Motor		1
32	DPSP4008ZS	Ass'y Screw		4
33	*See Page 28	Power Supply & Speed Control C.B.⚠	Refer to Table 1 ┐	
34	"	L.E.D. C.B.	" These parts are	
35	"	Fuse C.B.	" not supplied	
36	"	Transistor C.B.	" only.	
37	"	Switch C.B.	" ┘	
38	*E65330-001	Spacer		1
39	SBSB3020N	Tapping Screw		1
40	*E22659-001	Platter		1
41	*See Page 28	Platter Cover	Refer to Table 1	
42	"	Power Cord with Plug	"	
43	QHS3876-162	Cord Stopper		1
44	E61695-001	Cord Stopper Plate		1
45	E03724-001	Signal Cord		1
46	QML1310-051	Lug Strip Ass'y		1
47	E60090-003	Shield Cover		1
48	E33944-001	Cord Stopper		1
49	*E35460-001	Dust Cover Ass'y		1
50	*E10215-001	Dust Cover		1
51	E61992-002	Hinge Ass'y		2
52	SDSP3008MS	Screw		4
53	*See Page 28	Bottom Board Ass'y	Refer to Table 1	
54	SBSB3012M	Tapping Screw		8
55	*See Page 28	Foot Ass'y	Refer to Table 1	
56	"	"	"	
57	Q03091-112	Washer		4
58	*E65273-001	Foot Holder		4
59	E48820-001	EP Adaptor		1
60	*See Page 28	Mask Cap	Refer to Table 1	
61	"	Fuse	"	
62	"	Voltage Selector ⚠	"	
63	* "	Switch Base	"	

NOTE ⚠ : SAFETY PARTS

13-(2) Mechanism Base Assembly

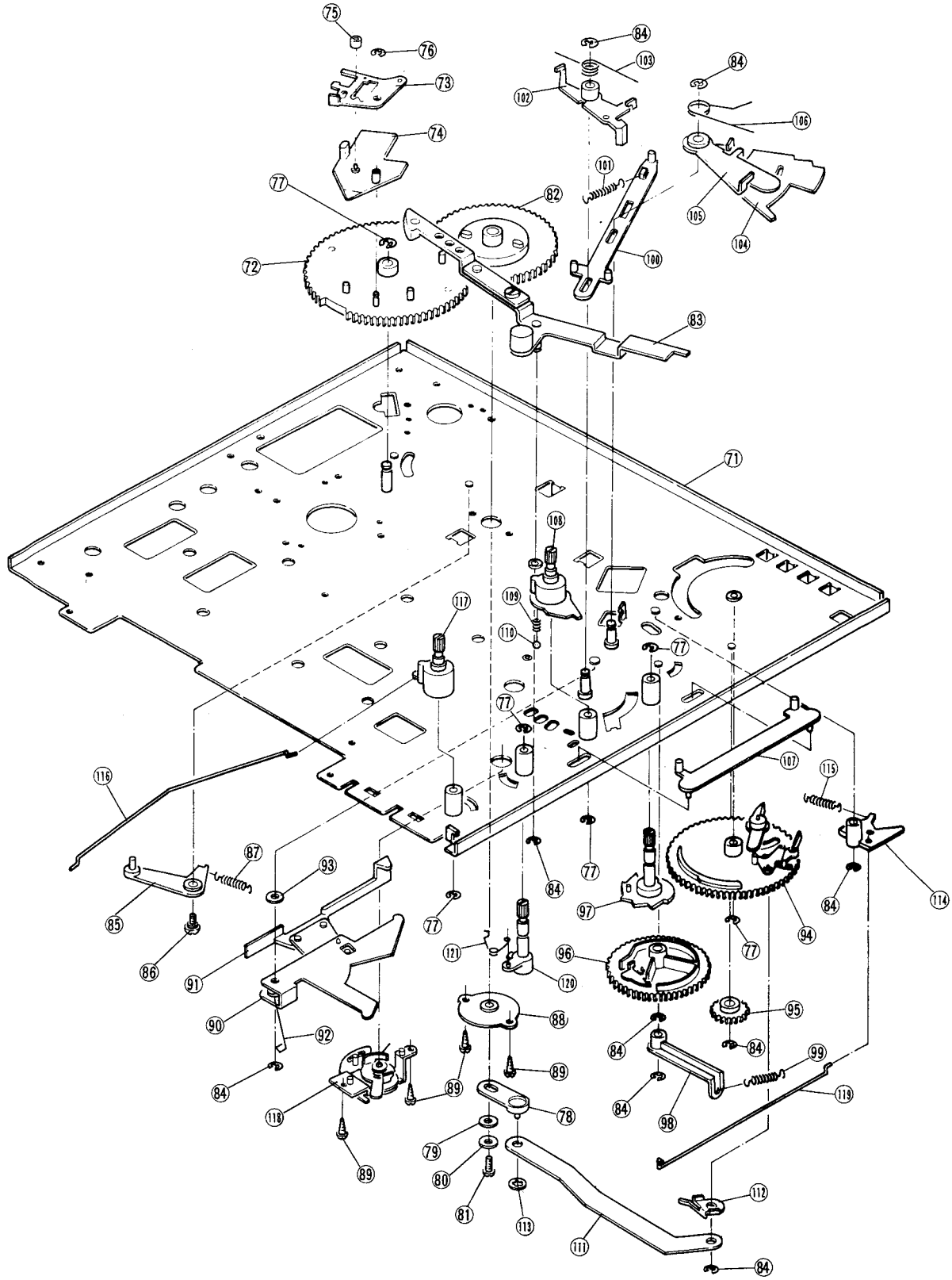


Fig. 40

Mechanism Base Assembly Parts List

Item No.	Parts No.	Parts Name	Description	Q'ty
71	*E10175-003	Base Sub Ass'y		1
72	*E21913-004	Main Gear Ass'y		1
73	*E65282-001	Engagement Pawl		1
74	*E65283-001	Lower Trip Pawl Ass'y		1
75	E60912-001	Speed Nut		1
76	REE1200X	"E" Ring		1
77	REE5000X	"		6
78	E60381-001	Lever		1
79	E60844-001	Spacer		1
80	WNS3000N	Washer		1
81	LPSP3008Z	Ass'y Screw		1
82	E60449-001	F. Gear Ass'y		1
83	*E35461-001	Trip Ass'y		1
84	REE3000X	"E" Ring		8
85	E60383-002	Stopper		1
86	G41507-2	Tapping Screw		2
87	E60384-001	Spring		1
88	E60382-001	Bushing		1
89	SBSB3008Z	Tapping Screw		4
90	E60395-001	Reset Plate		1
91	E60394-002	Switch Plate Ass'y		1
92	E60396-001	Spring		1
93	WNS4000N	Washer		1
94	E34236-002	Dr. Gear Ass'y		1
95	E60400-001	Idler Gear		1
96	E60405-002	Sub Gear Ass'y		1
97	E34238-001	R.C.T. Cam Ass'y		1
98	E60407-001	Ratchet Lever		1
99	E60489-001	Spring		1
100	E60415-001	Reject Plate		1
101	E60416-001	Spring		1
102	E60417-002	Reject Lever		1
103	E60418-001	Spring		1
104	E60425-001	Index Ass'y		1
105	E60426-002	Lever		1
106	E60427-001	Spring		1
107	E60422-003	Select Plate		1
108	E60421-001	Select Shaft Ass'y		1
109	E60488-001	Spring		1
110	G41505-5	Steel Ball		1
111	E34237-002	Link		1
112	E60900-001	Cushion Spring		1
113	G4942-4	Speed Nut		1
114	E60390-002	Elevator Cam		1
115	E49596-001	Spring		1
116	E60428-001	Rod		1
117	E60429-002	Start Shaft Ass'y		1
118	E34240-002	Cueing Ass'y		1
119	E60414-001	Rod		1
120	E34239-001	Cueing Cam Ass'y		1
121	E49608-002	Spring		1

13-(3) Tonearm Assembly

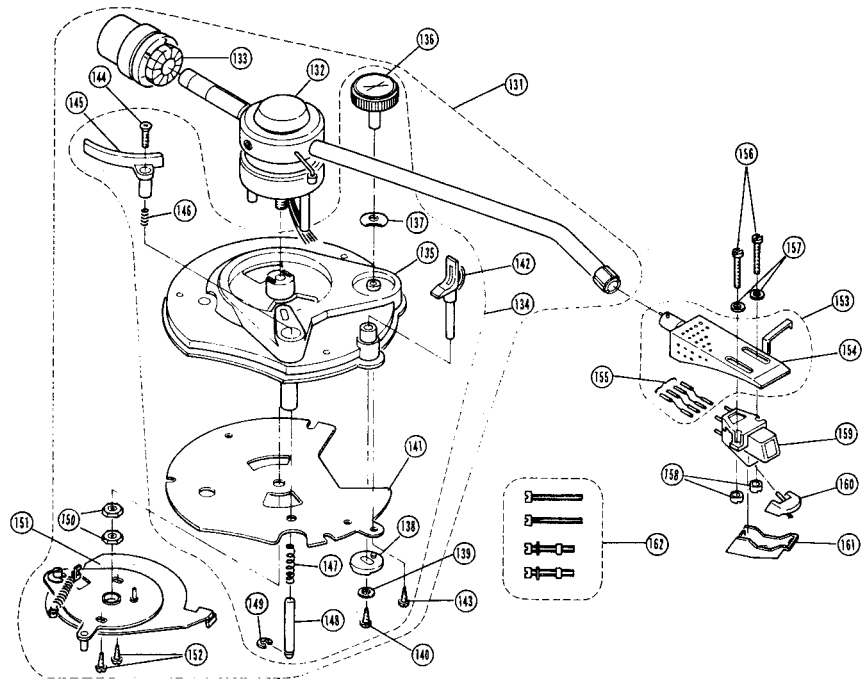
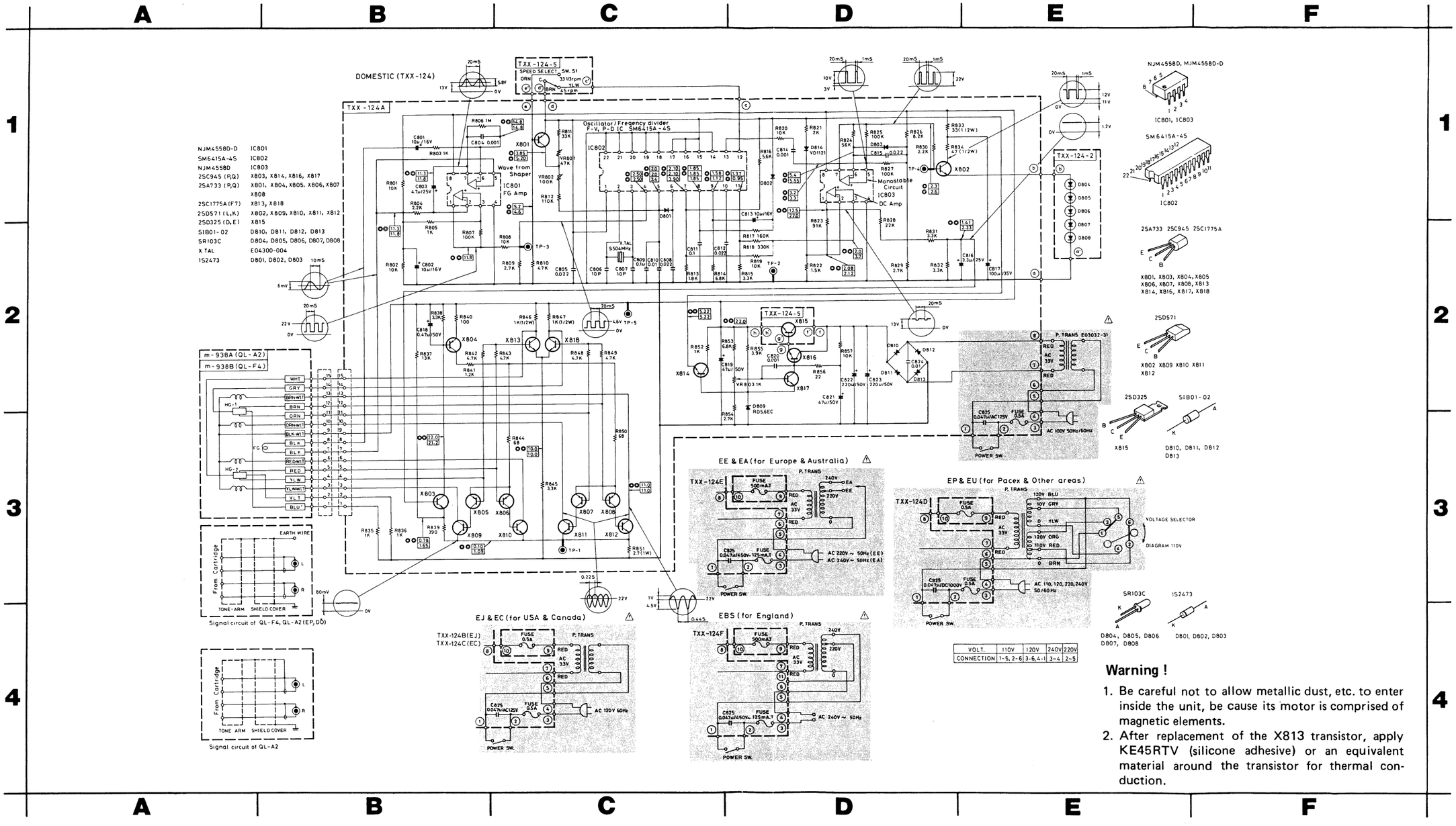


Fig. 41

Tonearm Assembly Parts List

Item No.	Parts No.	Parts Name	Description	Q'ty
131	*See Page 28	Tonearm Ass'y	Refer to Table 1	1
132	"	Arm Ass'y	Refer to Table 1	1
133	*E35559-001	Counter Weight Ass'y		1
134	*E22733-001	Pick Up Base Ass'y		1
135	*E22803-001	Pick Up Base Sub Ass'y		1
136	*E35555-001	Anti-Skating Knob		1
137	E49602-002	Washer		1
138	E34258-001	Anti-Skating Cam		1
139	WSS2000Z	Washer		1
140	SBSB2005Z	Tapping Screw		1
141	E35028-001	Plate		1
142	E60326-002	Arm Rest Ass'y		1
143	SBSB2608Z	Tapping Screw		1
144	SSSP3016MS	Screw		1
145	E60475-001	Elevator Ass'y		1
146	E49649-001	Spring		1
147	E61194-001	Spring		1
148	E49655-005	Elevator Shaft		1
149	REE3000	"E" Ring		1
150	G5053	Nut		2
151	E34241-003	Arm Lever Ass'y		1
152	SBSB3008Z	Tapping Screw		2
153	*E34991-006	Headshell Ass'y		1
154	E34990-002	Headshell Body		1
155	E60501-001	Wire Ass'y		1
156	See Page 28	Screw	Refer to Table 1	2
157	"	Washer	"	2
158	"	Nut	"	2
159	"	Cartridge	"	1
160	"	Needle Ass'y	"	1
161	"	Needle Cover	"	1
162	"	Screw Ass'y	"	1

14. TXX-124 Schematic Diagram



Warning !

1. Be careful not to allow metallic dust, etc. to enter inside the unit, be cause its motor is comprised of magnetic elements.
2. After replacement of the X813 transistor, apply KE45RTV (silicone adhesive) or an equivalent material around the transistor for thermal conduction.

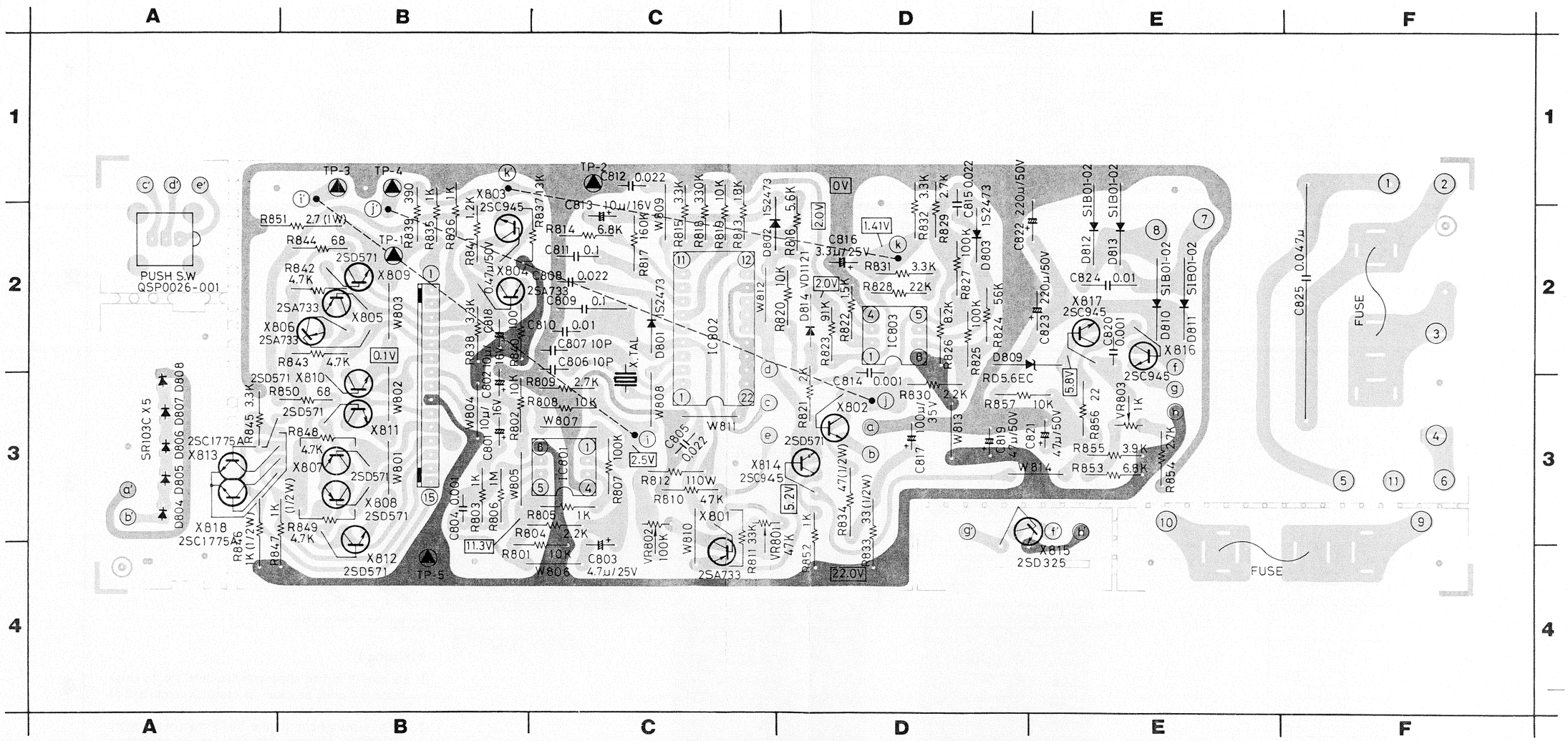
Notes:

1. The voltage indicated in ☐ is measured by a tester having an internal impedance 33kΩ.
   - ⓞ ☐ 33-1/3 rpm
   - ◎ ☐ 45 rpm
   - ☐ when locked
2. X809 through X812 should be used the same rank.
   (There are 4 kinds of rank of the marker as sollows: 2SD571K1, K2 L1 and L2.
   Be sure to used the only one of them.)
3. When repalcing 2SC1775A(F7), X813 or X818, it should be replace together with other one having the same rank.
4. When replacing the parts ⚠ in the darkened ares (■), be sure to use the designated parts to ensure safety.
5. This is the standard circuit diagram.
   The design and constants are subject to change without notice.

Fig. 42

15. TXX-124 Printed Circuit Board Ass'y

The assembly varies according to the area where the units is sold. Refer to the table shown on page 28.



Notes:
1. Voltage values in ☐ are measured with a tester (impedance 33 kΩ/V) without a signal applied to the unit.
2. ▒ indicates positive B power supply.
   ▓ indicates ground.
   ▒ indicates the others.

Warning !

1. Be careful not to allow metallic dust, etc. to enter inside the unit, be cause its motor is comprised of magnetic elements.
2. After replacement of the X813 transistor, apply KE45RTV (silicone adhesive) or an equivalent material around the transistor for thermal conduction.

Fig. 43

Parts List (TXX-124)

Transistors

Item No.	Parts Number	Rating		Description	Maker
		Pc	fT		
X801	2SA733(P,Q)	250mW	180MHz	Silicon	N.E.C
X802	2SD571(L,K)	800mW	110MHz	〃	〃
X803	2SC945(P,Q)	250mW	250MHz	〃	〃
X804	2SA733(P,Q)	〃	180MHz	〃	〃
X805	2SA733(P,Q)	〃	〃	〃	〃
X806	2SA733(P,Q)	〃	〃	〃	〃
X807	2SA733(P,Q)	〃	〃	〃	〃
X808	2SA733(P,Q)	〃	〃	〃	〃
X809	2SD571(L,K)	800mW	110MHz	〃	〃
X810	2SD571(L,K)	〃	〃	〃	〃
X811	2SD571(L,K)	〃	〃	〃	〃
X812	2SD571(L,K)	〃	〃	〃	〃
X813	2SC1775A(F7)	300mW	200MHz	〃	Hitachi
X814	2SC945(P,Q)	250mW	250MHz	〃	N.E.C
X815	2SD325(D,E)	10W	8MHz	〃	Sanyo
X816	2SC945(P,Q)	250mW	250MHz	〃	N.E.C
X817	2SC945(P,Q)	〃	〃	〃	〃
X818	2SC1775A(F7)	300mW	200MHz	〃	Hitachi

Integrated Circuits

Item No.	Parts Number	Rating	Description	Maker
IC801	NJM4558D-D		IC	Shin Nihon Musen
IC802	SM6415A-4S		〃	Nihon Precision Circiut
IC803	NJM4558D		〃	Shin Nihon Musen

Diodes

Item No.	Parts Number	Rating	Description	Maker
D801	1S2473		Silicon	Toyo Dengu
D802	1S2473		〃	〃
D803	1S2473		〃	〃
D804	SR103C		L.E.D	N.E.C
D805	SR103C		〃	〃
D806	SR103C		〃	〃
D807	SR103C		〃	〃
D808	SR103C		〃	〃
D809	RD5,6EC		Zener	〃
D810	SIB01-02		Silicon	Kyodo Denki
D811	SIB01-02		〃	〃
D812	SIB01-02		〃	〃
D813	SIB01-02		〃	〃
D814	VD1121		Varistor	N.E.C

Parts List (TXX-124)

Capacitors

Item No.	Parts Number	Rating		Description
C801	QEW51CA-106	10μF	16V	Electrolytic
C802	QEW51CA-106	〃	〃	〃
C803	QEW51EA-475	4.7μF	25V	〃
C804	QCF31HP-102	1000pF	50V	Ceramic
C805	QCF31HP-223	0.022μF	〃	〃
C806	QCT25UJ-100	10pF		〃
C807	QCT25UJ-100	〃		〃
C808	QFM31HK-223	0.022μF	50V	Mylar
C809	AWS104J50	0.1μF	〃	Polypropylene
C810	QFM31HK-103	0.01μF	〃	Mylar
C811	QFM31HK-104	0.1μF	〃	〃
C812	QCF31HP-223	0.022μF	〃	Ceramic
C813	QEW51CA-106	10μF	16V	Electrolytic
C814	QCF31HP-102	1000pF	50V	Ceramic
C815	QFM31HK-223	0.022μF	〃	Mylar
C816	QEB51EM-335	3.3μF	25V	Low Leak Current Electrolytic
C817	QEW51VA-107	100μF	35V	Electrolytic
C818	QEW51HA-474	0.47μF	50V	〃
C819	QEW51HA-476	47μF	〃	〃
C820	QCF31HP-102	1000pF	〃	Ceramic
C821	QEW51HA-476	47μF	〃	Electrolytic
C822	QEW51HA-227	220μF	〃	〃
C823	QEW51HA-227	〃	〃	〃
C824	QCF12HP-103	0.01μF	500V	Ceramic
C825	QFA72BM-473	0.047μF	125V	Metallized Polypropylene (For TXX-124C)
C825	QFH53AM-473M	〃	1000V	〃 (For TXX-124D)
C825	QFH72BM-473M	〃	125V	〃 (For TXX-124B)
C825	QFZ9007-473	〃	425V	Film (For TXX-124E)
C825	QFZ9007-473BS	〃	〃	〃 (For TXX-124F)

Resistors

Item No.	Parts Number	Rating		Description
R801	QRD141J-103SY	10kΩ	1/4W	Carbon
R802	QRD141J-103SY	〃	〃	〃
R803	QRD141J-102SY	1kΩ	〃	〃
R804	QRD141J-222SY	2.2kΩ	〃	〃
R805	QRD141J-102SY	1kΩ	〃	〃
R806	QRD141J-105SY	1MΩ	〃	〃
R807	QRD141J-104SY	100kΩ	〃	〃
R808	QRD141J-103SY	10kΩ	〃	〃
R809	QRD141J-272SY	2.7kΩ	〃	〃
R810	QRD141J-473SY	47kΩ	〃	〃
R811	QRV144F-3302	33kΩ	〃	Metal Film
R812	QRV144F-1103	110kΩ	〃	〃
R813	QRD141J-182SY	1.8kΩ	〃	Carbon
R814	QRD141J-682SY	6.8kΩ	〃	〃
R815	QRD141J-332SY	3.3kΩ	〃	〃

Parts List (TXX-124)

Resistors

Item No.	Parts Number	Rating		Description
R816	QRD141J-562SY	5.6kΩ	1/4W	Carbon
R817	QRD141J-164SY	160kΩ	"	"
R818	QRD141J-334SY	330kΩ	"	"
R819	QRD141J-103SY	10kΩ	"	"
R820	QRD141J-103SY	"	"	"
R821	QRD141J-202SY	2kΩ	"	"
R822	QRD141J-152SY	1.5kΩ	"	"
R823	QRD141J-913SY	91kΩ	"	"
R824	QRD141J-563SY	56kΩ	"	"
R825	QRD141J-104SY	100kΩ	"	"
R826	QRD141J-822SY	8.2kΩ	"	"
R827	QRD141J-104SY	100kΩ	"	"
R828	QRD141J-223SY	22kΩ	"	"
R829	QRD141J-272SY	2.7kΩ	"	"
R830	QRD141J-222SY	2.2kΩ	"	"
R831	QRD141J-332SY	3.3kΩ	"	"
R832	QRD141J-332SY	"	"	"
R833	QRG129J-330	33Ω	1/2W	Oxide Metal Film
R834	QRG129J-470	47Ω	"	"
R835	QRD141J-102SY	1kΩ	1/4W	Carbon
R836	QRD141J-102SY	"	"	"
R837	QRD141J-133SY	13kΩ	"	"
R838	QRD141J-332SY	3.3kΩ	"	"
R839	QRD141J-391SY	390Ω	"	"
R840	QRD141J-101SY	100Ω	"	"
R841	QRD141J-122SY	1.2kΩ	"	"
R842	QRD141J-472SY	4.7kΩ	"	"
R843	QRD141J-472SY	"	"	"
R844	QRD141J-680SY	68Ω	"	"
R845	QRD141J-332SY	3.3kΩ	"	"
R846	QRG129J-102	1kΩ	1/2W	Oxide Metal Film
R847	QRG129J-102	"	"	"
R848	QRD141J-472SY	4.7kΩ	1/4W	Carbon
R849	QRD141J-472SY	"	"	"
R850	QRD141J-680SY	68Ω	"	"
R851	QRX017J-2R7S	2.7Ω	1W	Metal Film
R852	QRD141J-102SY	1kΩ	1/4W	Carbon
R853	QRD141J-682SY	6.8kΩ	"	"
R854	QRD141J-272SY	2.7kΩ	"	"
R855	QRD141J-392SY	3.9kΩ	"	"
R856	QRD141J-220SY	22Ω	"	"
R857	QRD141J-103SY	10kΩ	"	"
VR801	RVG0911H306-473	47kΩ	———	Variable
VR802	RVG0911H306-104	100kΩ	———	"
VR803	QVP4A0B-102	1kΩ	———	"

Others

Item No.	Parts Number	Rating		Description
	E04300-004			Quartz Crystal
	E41541-21			Bushing
	See page 28			Contact Clip
	E48965-002			Fuse Clip
	E61466-003			Heatsink
	QSP0026-001			Push Switch
	See page 28			P.C. Board (Plain)

16. Packing Materials and Part Numbers

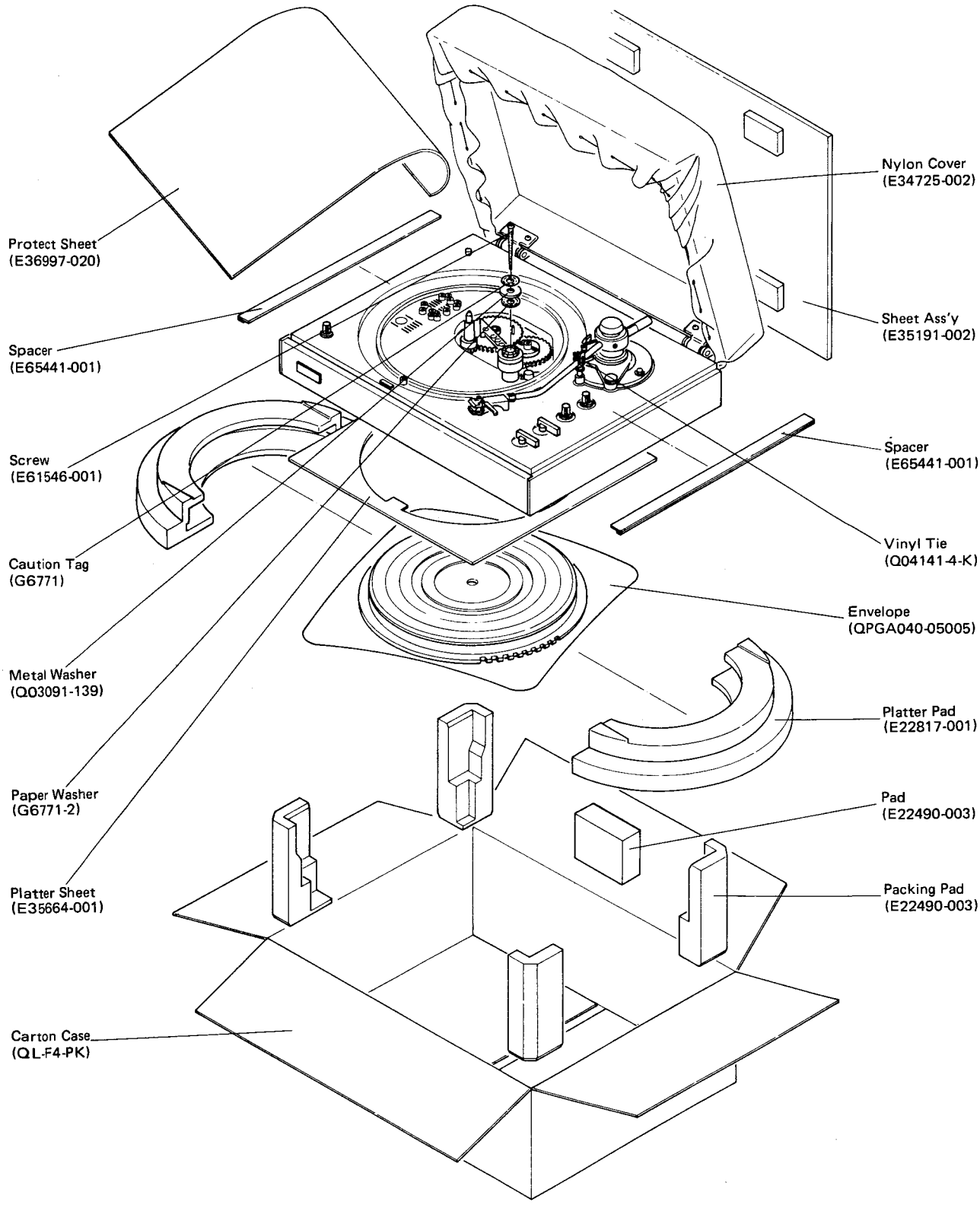


Fig. 46

17. QL-F4 Schematic Diagram

NJM4558D-D	IC801
SM6415A-4S	IC802
NJM4558D	IC803
2SC945 (P,Q)	X803, X814, X816, X817
2SA733 (P,Q)	X801, X804, X805, X806, X807 X808
2SC1775A(F7)	X813, X818
2SD571 (L,K)	X802, X809, X810, X811, X812
2SD325 (D,E)	X815
SIB01-02	D810, D811, D812, D813
SR103C	D804, D805, D806, D807, D808
X.TAL	E04300-004
IS2473	D801, D802, D803

DOMESTIC (TXX-124)

TXX-124-5
SPEED SELECT SW. S1
ORN 33 1/3rpm YLW 45rpm BRN

TXX-124A

Oscillator / Freqency divider
F-V, P-D IC SM6415A-4S

IC801 FG Amp

Wave from Shaper

X.TAL 9.504MHz

TP-1 TP-2 TP-3 TP-5

m-938A (QL-A2)
m-938B (QL-F4)

WHT GRY BRN-WIT BRN ORN ORN-WIT BLK-WIT BLK BLK RED-WIT RED YLW YLW-WIT VLT BLU'

HG-1 HG-2 FG

Signal circuit of QL-F4, QL-A2 (EP, DŌ)

From Cartridge L R TONE-ARM SHIELD COVER EARTH WIRE

Signal circuit of QL-A2

From Cartridge L R TONE ARM SHIELD COVER

TXX-124-5

EE & EA (for Europe & Austra

TXX-124E
P. TRANS
FUSE 500mA.T
AC 33V
RED
POWER SW.
C825 0.047μ/450V~ FUSE 125mA.T

EJ & EC (for USA & Canada) ⚠

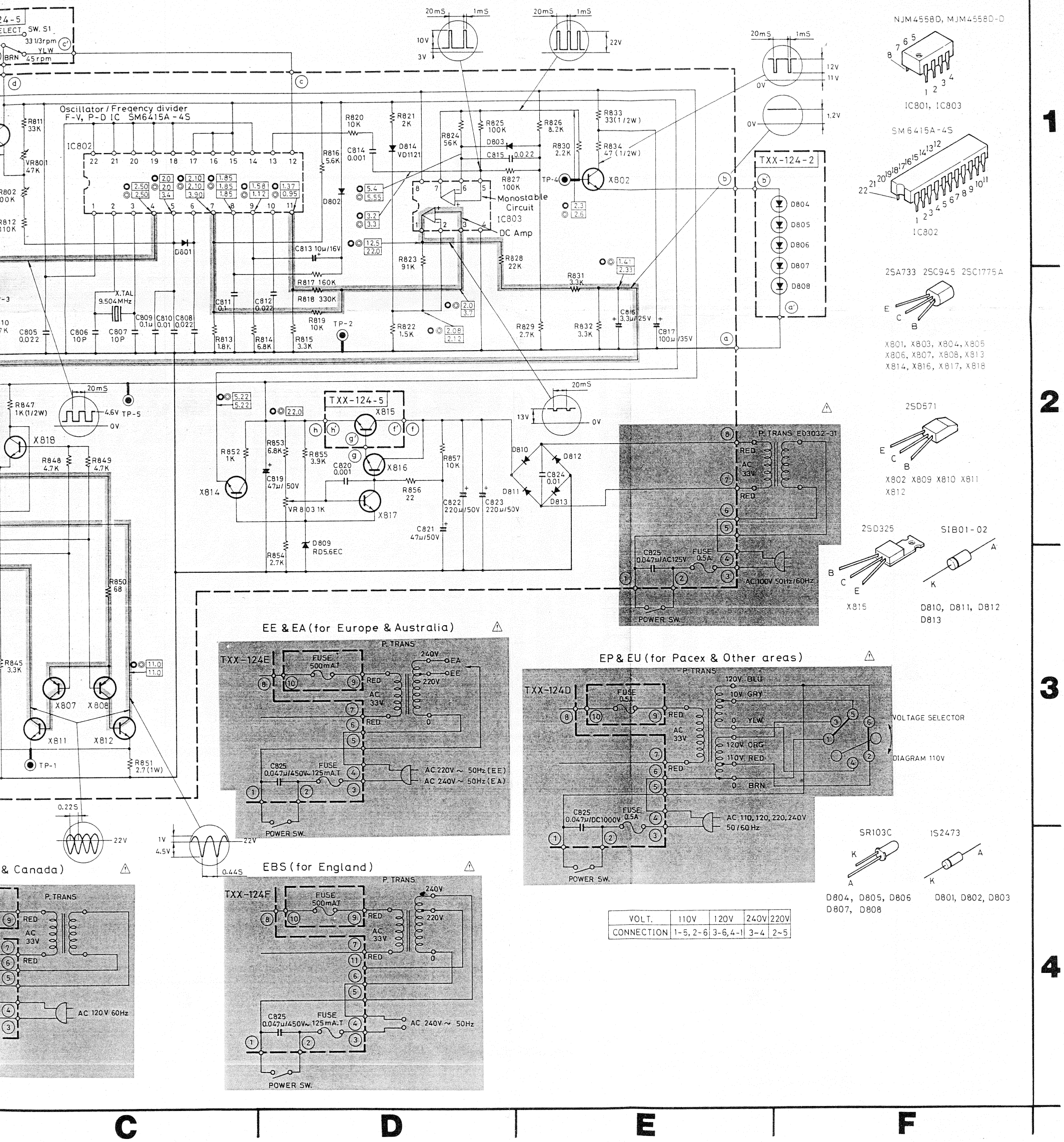
TXX-124B(EJ)
TXX-124C(EC)
FUSE 0.5A
P. TRANS
AC 33V
RED
C825 0.047μ/AC125V
FUSE 0.5A
AC 120V 60Hz
POWER SW.

EBS (for England)

TXX-124F
FUSE 500mAT
P. TRANS
AC 33V
RED
C825 0.047μ/450V~ FUSE 125mA.T
POWER SW.

Notes:

1. The voltage indicated in ▭ is measured by a tester having an internal impedance 33kΩ.
   - ◎ ▭ 33-1/3 rpm
   - ◎ ▭ 45 rpm
   - ▭ when locked
2. X809 through X812 should be used the same rank.
   (There are 4 kinds of rank of the marker as sollows: 2SD571K1, K2 L1 and L2.
   Be sure to used the only one of them.)
3. When repalcing 2SC1775A(F
4. —— indicates positive B pow
5. indicates the signal path
6. When replacing the parts ⚠ i
7. This is the standard circuit dia
   The design and constants are



VOLT.	110V	120V	240V	220V
CONNECTION	1-5, 2-6	3-6, 4-1	3-4	2-5

a tester having an internal impedance 33kΩ.

rank.
llows: 2SD571K1, K2 L1 and L2.

3. When repalcing 2SC1775A(F7), X813 or X818, it should be replace together with other one having the same rank.
4. —— indicates positive B power supply.
5. indicates the signal path.
6. When replacing the parts ⚠ in the darkened ares ( ), be sure to use the designated parts to ensure safety.
7. This is the standard circuit diagram.
   The design and constants are subject to change without notice.

TXX-124 Printed Circuit Board Ass'y

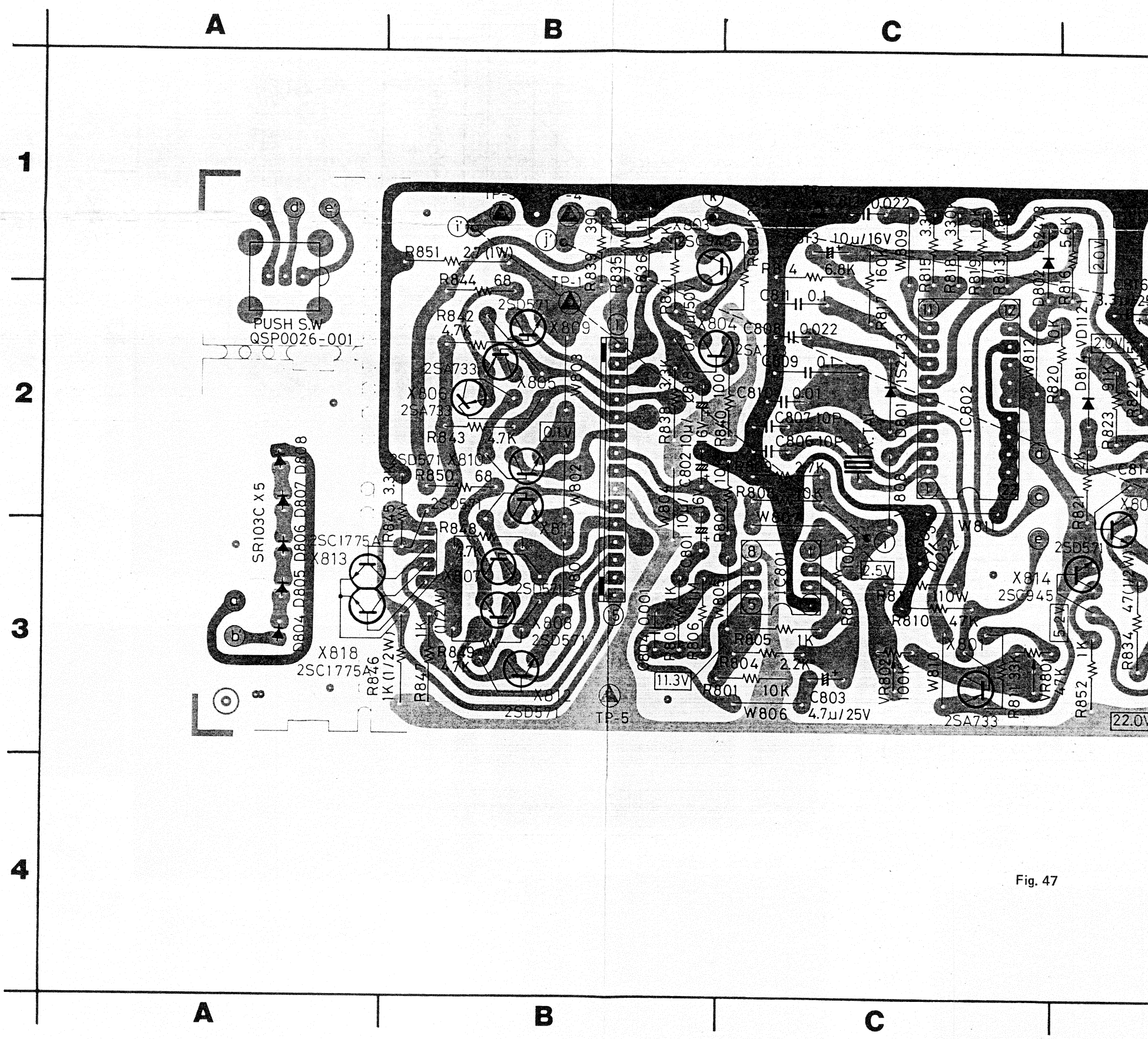


Fig. 47

Notes:

1. Voltage values in [ ] are measured with a tester (impedance 33 kΩ/V) without a signal applied to the unit.
2. ▒ indicates positive B power supply.
   ■ indicates ground.
   ▒ indicates the others.

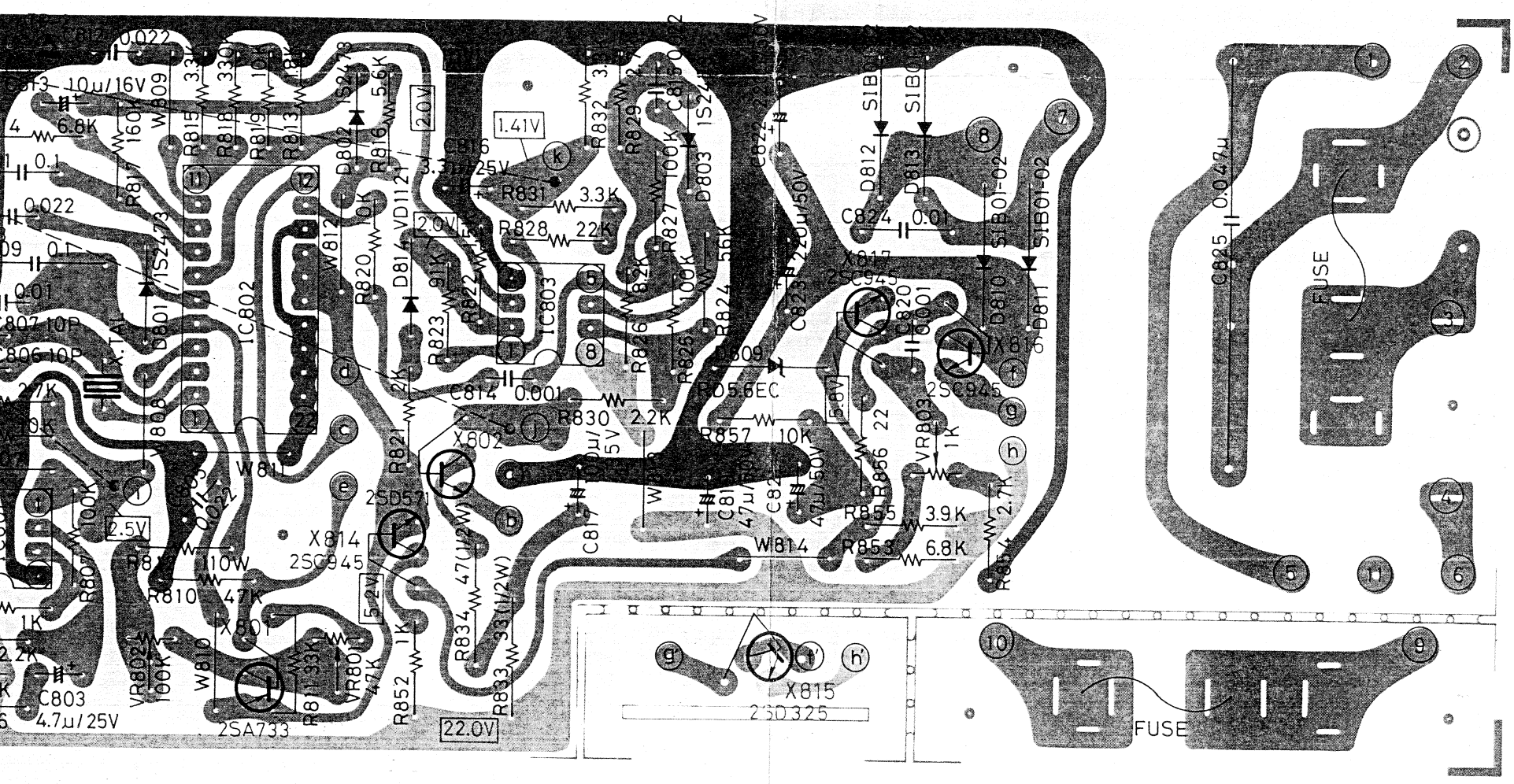

C812 0.022
C813 10μ/16V
6.8K
0.1
0.022
0.1
0.01
C807 10P
C806 10P
27K
10K
2.5V
R807 100K
R808 2K
R809 2K
R810 47K
R811 33K
R812 10K
R813 18K
R814 10K
R815 3.3K
R816 3.3K
R817 16K
R818 330
R819 10K
W809
W810
W811
W812
W813
W814
W815
W816
W817
W818
W819
D801 1S2473
D802 1S2473
D803 1S2473
D804 1S2473
D805 1S2473
D806 1S2473
D807 1S2473
D808 1S2473
D809 RD5.6EC
D810 S1B01-02
D811 S1B01-02
D812 S1B01-02
D813 S1B01-02
C801 0.022
C802 0.022
C803 4.7μ/25V
C804 0.022
C805 0.022
C814 0.001
C815 3.3μ/25V
C816 3.3μ/25V
C817 47μ/50V
C818 47μ/50V
C819 47μ/50V
C820 0.001
C821 47μ/50V
C822 47μ/50V
C823 220μ/50V
C824 0.01
C825 0.047μ
C826 47μ/50V
C827 47μ/50V
C828 47μ/50V
C829 47μ/50V
C830 47μ/50V
C831 47μ/50V
C832 47μ/50V
R820 91K
R821 2K
R822 2K
R823 2K
R824 56K
R825 100K
R826 8.2K
R827 100K
R828 22K
R829 100K
R830 2.2K
R831 3.3K
R832 3.3K
R833 33Ω/2W
R834 47Ω/2W
R852 1K
R853 6.8K
R854 2.7K
R855 3.9K
R856 22
R857 10K
VR801 47K
VR802 100K
VR803 1K
X801 2SA733
X802 2SD571
X814 2SC945
X815 2SD325
X816 2SC945
X817 2SC945
2.0V
5.2V
1.41V
22.0V
5.8V
FUSE
FUSE

Fig. 47

18. Accessories List

Description	U.S.A.	Canada	Europe	U.K.	Australia	U.S. Military Market and Other countries
Instruction Book	E30580-664A	E30580-664A	E30580-664A	E30580-664A	E30580-664A	E30580-664A
Warranty Card	BT20032	BT20025	———	BT20013B	BT20029	BT20032 (U.S. Military market)
Do it Better	BT20024B	———	———	———	———	———
Service Procedure	BT20023	———	———	———	———	———
Siemens Plug	———	———	———	———	———	E04056 (Other countries)
EP Adaptor	E48820-001	E48820-001	E48820-001	E48820-001	E48820-001	E48820-001
Screw Ass'y	E61153-003	E61153-003	———	E61153-003	———	———
Envelope (Instruction Book)	E64207-001	E64207-001	E64207-001	E64207-001	E64207-001	E64207-001

19. Parts List with Specified Numbers for Designated Areas

Item No.	Description	U.S.A. & Canada	Europe	U.K.	Australia	U.S. Military Market and Other countries
13	Micro Switch ⚠	QSM1V01-018	QSM1V01-022	QSM1V01-022	QSM1V01-022	QSM1V01-018
14	Screw	LPSP3014ZS	———	———	———	LPSP3014ZS
15	Tone Arm Ass'y	ARM-522	MP-183S	ARM-526	MP-183S	MP-183S
27	Power Transformer ⚠	E03032-31B	E03032-31C	E03032-31C	E03032-31C	E03032-31D
30	Fuse ⚠	QMF61U1-R50 (0.5A)	QMF51A2-R50 (0.5AT)	QMF51A2-R50 (0.5AT)	QMF51A2-R50 (0.5A)	QMF60S1-R50 (0.5A)
33	Power Supply and Speed Control C.B. ⚠	TXX-124B (TXX-124C)-1	TXX-124E-1	TXX-124F-1	TXX-124E-1	TXX-124D-1
34	L.E.D. C.B.	" -2	" -2	" -2	" -2	" -2
35	Fuse C.B.	" -3	" -3	" -3	" -3	" -3
36	Transistor C.B.	" -4	" -4	" -4	" -4	" -4
37	Switch C.B.	" -5	" -5	" -5	" -5	" -5
	Contact Clip	E45524-001	E48965-002	E48965-002	E48965-002	E45524-001
	P.C. Board (Plain)	E22742-002	E22742-001	E22742-001BS	E22742-001	E22742-001
41	Platter Cover	E22719-002	E22719-001	E22719-001	E22719-001	E22719-001
42	Power Cord with Plug ⚠	QMP1200-244	QMP3910-244	QMP9017-008	QMP2500-200	QMP1200-244
53	Bottom Board Ass'y	E22342-007	E22342-008	E22342-008	E22342-008	E22342-008
55	Foot Ass'y	E35118-010	E35118-012	E35118-012	E35118-012	E35118-012
56	"	" -011	" -013	" -013	" -013	" -013
60	Mask Cap	E65395-001	———	———	———	———
61	Fuse ⚠	QMF61U1-R50 (0.5A)	QMF51A2-R125 (125mAT)	QMF51A2-R125 (125mAT)	QMF51A2-R125 (125mAT)	QMF60S1-R50 (0.5A)
62	Voltage Selector ⚠	———	———	———	———	QSR0085-001
63	Switch Base	———	E35545-001	E35545-001	E35545-001	———
131	Tonearm Ass'y	E22734-001	E22734-002	E22734-002	E22734-002	E22734-002
132	Arm Ass'y	E22732-001	E22732-002	E22732-002	E22732-002	E22732-002
156	Screw	———	E61844-001	———	E61844-001	E61844-001
157	Washer	———	EG82971	———	EG82971	EG82971
158	Nut	———	E60503-001	———	E60503-001	E60503-001
159	Cartridge	———	MD-1025	———	MD-1025	MD-1025
160	Needle Ass'y	———	DT-Z1S	———	DT-Z1S	DT-Z1S
161	Needle Cover	———	E34268-001	———	E34268-001	E34268-001
162	Screw Ass'y	E61153-003	———	E61153-003	———	———

NOTE ⚠ : SAFETY PARTS

Table 1

JVC

VICTOR COMPANY OF JAPAN, LIMITED, TOKYO, JAPAN

Printed in Ja
– 5301 — O